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Illustrations of HOSPITAL PRACTICE:

METROPOLITAN AND PROVINCIAL.

ST. MARY'S HOSPITAL.

I. AMPUTATION AT THE HIP-JOINT.

Under the care of S. LANE, Esq.

[*From Notes supplied by* E. A. HART, Esq., *House-Surgeon.*]

D. L., a navvy, had been working on the railway, and by an accident had fallen under the wheels of a truck laden with a ton and a half of clay. When admitted, he was in a state of extreme collapse, and had lost much blood. The soft parts of the anterior and upper part of the thigh were greatly bruised and lacerated; the finger, when introduced by a large quadrangular opening situated a few inches below the groin, reached a comminuted fracture of the thigh-bone. From the lower portion of the bone projected upwards a long spiculum, which had protruded and lacerated the flesh. The soft parts of the perinæum were ruptured in the middle line from the base of the penis to the rectum, which was laid open. The wound yawned widely, and a finger passed into the lower wound touched that introduced into the rent in the perinæum. The tuberosity of the ischium was exposed, and the skin of the buttocks greatly undermined. The wounds were temporarily dressed; sutures were applied to the rent in the perinæum; stimuli were freely administered. The serious nature of the injuries indicated amputation as the only resort. But it was not until sixteen hours after admission that the state of collapse had so far passed off, as to allow the performance of this operation. At two P.M. Mr. Lane proceeded to amputate the limb at the hip-joint. The knife was entered from within, and the anterior flap cut in the usual manner, the fingers of an assistant following the knife and compressing the femoral artery, so that no blood was lost from this source. The injury to the soft parts was so great that the anterior flap was cut smaller than usual. Disarticulation was effected, and a large posterior flap cut, a second assistant compressing the vessels as before. Three or four vessels were tied in the posterior flap; the femoral was secured. The femoral vein gave much blood, and ligature was applied. After the operation, stimuli were freely administered, and he partly rallied for a time, but soon sank again and died in a few hours.

The examination of the limb showed extensive injury to the soft parts. The muscles were bruised to a jelly on both aspects of the thigh, and pools of blood were collected in lacerated cavities of flesh. The line of fracture ran transversely through the lesser trochanter.

REMARKS. We alluded in our last week's hospital report (p. 769) to the above case. It was one of those painful occurrences in which surgeons are compelled to act, although without much prospect of success. The frightful laceration of the soft parts would of itself have precluded all hope of saving the limb, even had the bone been uninjured; with the addition of the compound fracture, it was still more imperative to remove it at once. The operation does not appear to have increased the collapse; on the contrary, a slight, and unfortunately only temporary, rallying was noticed after its performance. Nor was much blood lost either at the time of the operation or afterwards. There was, indeed, some oozing of blood from the vessels of the stump; but not from any vessel of considerable size, and not more than would inevitably have occurred from the great wound made by the accident. Still it reduced the patient's already exhausted forces, and appeared to be the proximate cause why the shock of the operation and accident proved fatal. The difference in result between primary amputations at the hip-joint and those on account of disease is well known: and the former are believed, as far as the small number hitherto placed on record enables us to judge, to be more fatal in civil practice than in military, from the greater amount of injury to the soft parts, and the greater shock produced by severe lacerations than gunshot wounds. The laceration of the perinæum and rectum in the case of this poor fellow was another most unfavourable feature in the case.

II. FRACTURE OF THE BASE AND VERTEX OF THE SKULL UNITED: DEATH FROM ABSCESS OF THE BRAIN.

Under the care of S. LANE, Esq.

[*From the Hospital Case-book.*]

JOHN G., aged 24, a sailor, was admitted May 7th, under the care of Mr. Lane. Eight weeks before his admission, he had fallen from the ship's yard, a distance of forty feet (the fall being broken by some obstacle), to the deck, striking his head. There was no external wound. He remained in Hospital for six weeks, being insensible, or partly so, for the first fortnight. Immediately on his return to consciousness, he found that he had lost the sight of the left eye, and the sense of hearing with the left ear. He also lost the sense of smell and taste, and the mouth was greatly drawn towards the right side. The sight and hearing on the right side were somewhat impaired, but soon recovered. On admission, a depression was seen on the superior part of the frontal bone, parallel to the wrinkles on the forehead, and about halfway between the brow and frontal eminence. All the above symptoms persisted, but there was some improvement in the sight and hearing. The features also were less drawn. Pressure on the affected part of the frontal bone caused much pain; and percussion on any part of the scalp was very painful, and caused involuntary closure of the left eye. His memory had entirely recovered, if it had ever been affected, as it was said to have been. It was observed that there was a little power of taste on the right side of the tongue, though none on the left.

He was ordered iodide of potassium, sulphate of soda (on account of hæmorrhoids), Plummer's pill, and occasional blisters, with good diet. He gained flesh rapidly, and lost the painful sensations. There was, however, no improvement of the special senses, except that of taste, which he had regained, although not entirely. No bad symptoms occurred till the beginning of June, when he fell into a fit, with convulsive jerking of the extremities, and clonic spasm of the facial muscles. He was bled to sixteen ounces, and consciousness gradually returned; but he was not quite restored to his former state for four days. The paralysis was not increased after this seizure. He went on very well till the middle of July, when he had another fit similar to the one above described. This came on after some unusual exertion. The same measures were adopted as before, and the symptoms followed the same course. After this he complained daily of confused sounds in the head, giddiness, and frequent inability to walk straight or control his movements. He had not, however, any diminution in the power of hearing or the other senses. His appetite throughout, except just after the fit, was good. The gums were never affected, notwithstanding that he took Plummer's pill regularly, and frequent doses of calomel. In the beginning of August, he was threatened with a recurrence of the fit. This was apparently put off for some time by care of the diet, etc. On May 20th, he was seized in the same way as before, rallied for a day, but then a recurrence of the fit finished his life, about five months after the accident.

Post mortem examination showed the muscles of the left arm and left side of the face wasted. The ridge of bone above described was traced on to the right, where it turned at a right angle, so as to gain the edge of the orbit. On exposing the bone, the parts of the fracture were seen to be firmly united.

On the inside of the skull, some deposit of new bone was found along the course of the superior longitudinal sinus. The meninges were congested. On removing the anterior lobes of the brain from the fossæ, a considerable quantity of pus suddenly escaped. This was found to come from the right side; and, on examining the anterior lobe on the right side, its under part was found broken down. The greater part of the under surface presented a ragged appearance, and part of it adhered to the dura mater on removal of the brain. The whole of the right olfactory nerve was destroyed, and the left partially. The left optic nerve was flattened and atrophied. In tracing the fracture of the frontal bone, it was found running from left to right, from a point just above the centres of the left orbital ridge to the anterior edge of the right orbit. Traced back from the orbital ridge, the fracture was found to traverse the orbital plates of the frontal and sphenoid, the upper surface of the orbital plate being carious in a small spot corresponding to the abscess of the brain. Another and independent fracture of the base of the skull was found to commence in the squamous portion of the left temporal bone; descending, it traversed the petrous portion, passing behind the aqueductus vestibuli, and terminating at the lower margin of the internal auditory foramen. The seventh pair of nerves were not found to be injured. All the lines of fracture were united by bony union. The preparation is in the Hospital Museum.

Remarks. The interest of head cases usually varies with the duration of the complaint, and with the number of points on which a diagnosis may be founded. Considered in both these respects, the case detailed above will be found of much value. Instances of fracture of the base united by bone are said to be very common, but the number to be found in our pathological collections is much smaller than is generally supposed. Mr. Hewett, in his lectures at the College of Surgeons, referred to those which have been preserved in London: the number was only five. Still there is no doubt that these fractures are of frequent occurrence, and that they do unite, although slowly. In the present case, the fracture is found united throughout in five months. In the Museum of St. George's Hospital is an instance of partial but firm union two months after the accident.

The number and variety of nerves involved in this injury is a very unusual symptom. Injuries of the seventh pair of nerves are very common, from the frequency with which fractures traverse the bony canal in which they are lodged; those of the nerves in the anterior fossa much less so; while it is very rare to find almost all the nerves in the two anterior fossæ of one side of the base involved as they were here. The olfactory bulbs, it will be observed, were implicated in the abscess; and the optic nerve showed traces of diseased action, doubtless following on the injury. The fifth nerve must, in all probability, have been injured somewhere, as the sensation of taste is said to have been more impaired on one side of the tongue than on the other. Now the loss of smell would, of course, impair the sense of taste very greatly; but this effect would not have been more perceptible on the affected than on the unaffected side. The seventh pair, although the lesion was not absolutely demonstrated, were traced to the seat of fracture.

The existence of two independent fractures may perhaps be accounted for by the nature of the accident, in which, besides the fall, there was a blow against some obstacle in the descent. The latter probably caused the fracture of the vertex, and the former that of the base.

All the other injuries, however, although useful in establishing the diagnosis of the direction of the fracture, etc., were subordinate to the morbid action in the brain, which was the immediate cause of death. The symptoms will show how insidiously abscess of the brain comes on and progresses. The giddiness, pain in the head, and epileptic convulsions, did indeed indicate the presence of some foreign body irritating the cerebral substance; but in the absence of the characteristic symptoms of abscess it would have been impossible to say that this was not a splintered portion of the internal table, or the remains of a traumatic effusion, of which latter injury a very interesting example will be fonnd in the Pathological Society's *Transactions*, p. 8. Here the patient was subject to occasional epileptic fits and pain in the head. The abscess might stand to the caries of the bone below it in the relation either of cause or of effect. Considering the comparatively short time which had elapsed, the absence of traces of morbid action in other parts of the injured bone, and the rarity of such a consequence of injury in this region, it is probable that the caries was produced by the direct irritation of the abscess, which was itself the result of bruising and laceration of this part of the cerebral substance.

ST. GEORGE'S HOSPITAL.

TWO CASES OF INFLAMMATORY SOFTENING OF THE BRAIN.

[*From Notes by* G. G. Rogers, M.D., *Medical Registrar.*]

Case I. E. H., aged 24, was admitted on June 10th, under the care of Dr. Page. She was a married woman, of sallow complexion, and had been ill for a month with vertigo, and pain in the back of the head and in the chest. She had had several rigors during the last two days, and perspired at night. It was said also that she spat blood occasionally, and suffered from palpitation; but a careful examination could detect no disease in the lungs or heart. It was thought that she was suffering more from low fever, the result of poor living, than anything else; but on the day following her admission she had a severe epileptic seizure. Wine was given, and citrate of potass with ammonia; and after the fit, a blister was put on the neck. She had no other fit until June 17th, when the epileptic seizure was repeated. After this there was ptosis of the left eyelid, with loss of sensation in the part. Consciousness had never been thoroughly restored after the first fit. She generally lay on her back, frequently sighing; her skin bedewed with clammy perspiration. The right eye closed on touching the lid, but the left was not susceptible of impressions. She sank on the 21st.

On *post mortem* examination, the body was found in good condition, and well formed. The bones of the skull were remarkably thin; the dura mater was not adherent to the calvaria. Nothing was observed on the surface of the brain, except slight gorging of the vessels. On making a section through the convolutions, very free bloody puncta were seen. At the base of the brain was a large collection of fluid, and over the pores and medulla oblongata the arachnoid was very opaque. The lateral ventricles were full of reddish serum, and all the central structures of the brain were softened; the fornix and septum lucidum being quite destroyed.

The capsules of both kidneys were very adherent, and their surface was mottled; but there was no destruction of their cortical substance.

Case II. John M., aged 30, a man who had formerly been a soldier, and served in the West Indies, was admitted July 20th, under the care of Dr. B. Jones. It seemed that while abroad he had been subject to attacks of giddiness and fainting fits. These symptoms passed off, however, and his health continued good until three weeks ago, when he was suddenly seized while at work at his trade (that of a shoemaker) with pain in the forehead, gradually extending to the occipital region; and this had become so bad, that latterly he had been unable to rest this part on a pillow. At the beginning of his illness, and for some (uncertain) time before, he was frequently affected with vomiting, sometimes six or seven times a day. On admission, his pupils were much dilated; pulse 60, jerking; tongue furred, bowels open. The pain in his head was very acute, but he was conscious when addressed. If not spoken to he wandered from time to time. He could not lie on his back. Twelve leeches were at once applied to the temples, and a dose of calomel and senna given. In the morning the pulse was 90; the tongue furred; the pupils quite as much dilated. The pain was a little easier; and after the bowels had been well opened he experienced much relief. Two grains of calomel every six hours were ordered, and ice to the head. On July 22nd, at 1 A.M., he was taken much worse, the pain being more intense, and causing him to groan continually. The pupils were sluggish and dilated, but there was no strabismus. He was quite conscious, and was somewhat easier after sixteen leeches had been applied. The dose of calomel was increased to three grains, with half a grain of opium, and the bowels were unloaded by a castor oil enema. The cessation of pain was, however, only temporary. At 11 A.M. the head symptoms were much more severe; and after ten or eleven hours of great suffering he expired.

On *post mortem* examination, the body was found to be in good condition. The convolutions of the brain were flattened. There was much fluid in the lateral ventricles. The central portion of the cerebellum was very much softened, so as to be easily washed away by a slight stream of water. The lining membrane of the fourth ventricle was much thickened, and very opaque. There was a large quantity of gelatinous lymph on the free surface of this membrane, where it passes over the

floor of the ventricle, so that the markings of that part of the brain were quite imperceptible.

The kidneys were somewhat congested; the heart was dilated and thinned, There was no other visceral disease.

Remarks. We have given the above as tolerably well marked instances of a disease more frequently talked of than seen; viz., idiopathic inflammation of the cerebral substance. That this was the real nature of the disease in both cases, admits, we think, of little doubt. The distinct history of inflammatory symptoms in the first case, and the presence of all the products of inflammation in the second, constitute as good evidence of the nature of the disease as can reasonably be demanded. It will be interesting to compare the symptoms in these cases with those detailed in the case of injury which immediately precedes, and in which the occurrence of suppuration in the brain was accompanied by symptoms much resembling those in the first of these cases—the same dizziness, pain in the head, epileptic convulsions, with a longer or shorter subsequent period of partial unconsciousness.

BIRMINGHAM AND MIDLAND COUNTIES EYE INFIRMARY.

CASES OF EXCISION OF THE EYEBALL.

By James Vose Solomon, Esq., F.R.C.S., Surgeon to the Infirmary.

[*Concluded from page* 498.]

In a recent number of the Journal (June 13th), are recorded four cases in which I excised the eyeball for the relief of serious sympathetic disorder, that had resisted carefully directed and long sustained treatment by drugs: in one case, for four months; in another, for six months; and in a third, more than three months. Two of the patients were of intemperate habits as regards drink, one was a great tobacco-smoker, and a fourth diathetically strumous. In two instances, the operation was undertaken as a *dernier ressort;* one of these was cured, and the other signally improved. In two cases, in which a good result was anticipated by myself prior to the operation, one was cured, and the other much relieved, the reparative power in the latter being excessively feeble. The ages of those cured were respectively seventeen and sixty years of age; of those relieved, thirty-one and thirty-two.

The more important practical conclusions that seem to me to be safely deducible from the cases to which I refer, are the following: (1) A disorganised eye, although devoid in itself of any irritation appreciable to the patient or medical observer, is capable of exerting a very prejudicial influence upon the nutrition of its companion (case II); (2) An eye sympathetically affected, although much damaged by disease, is rendered a far more serviceable optical instrument after excision of the disorganised companion eye than it can be by any other means at present discovered; (3) That in some instances, a constitutional as well as a local cause is concerned in the first production, or recurrence, after a cure, of the sympathetic ocular mischief.

In the *first* of the three following cases, excision of the eye was undertaken not so much in relation to the sympathetic disorder in the fellow-organ, as to cure neuralgic and other sufferings, which had baffled for nearly six years the resources of the British Pharmacopœias and residence at various times at the seaside.

The removal of a disorganised and powerless globe was resorted to in case VI, as a preliminary step to the extraction of a hard cataract which had existed two years in the companion eye.

Case VII is chiefly remarkable for the very trivial inconvenience that followed the operation, only two hours pain having followed the excision.

Case V. *Recurrent attacks of Ophthalmia and Severe Neuralgic Paroxysms following Injury of the Eye, cured by Excision of the Globe.* Mr. P., aged 53, but in appearance much younger, of short stature, florid complexion, brown hair and irides, habitually temperate, consulted me in the autumn of 1854, on account of neuralgia of the right eye, for the permanent cure of which, after seeing him a few times, I informed him an operation would be necessary. At this opinion, being a timid man, he took alarm; and I saw him no more till the summer of the present year. In the interval, the assistance of several able practitioners, and of an eminent ophthalmologist, was obtained, unhappily, without any lengthened amelioration taking place in the symptoms. A visit to Rhyl, by improving the general health, worn by long suffering, was of temporary benefit. With the exception of Mr. Francis Burdett, the practitioners to whom I have alluded unanimously recommended that no attempt to remove either the front or the whole of the globe should be submitted to.

The tissues of the right eye in 1854, and in the summer of this year (1857), presented the following appearances. The superficial vessels of the globe, especially the muscular arteries, were more numerous and more dilated than normal; the sclerotic, cornea, and aqueous humour, appeared healthy; the iris, at its upper and outer part, was bossulated, in consequence of past inflammation of its parenchyma; the pupil was much narrowed, round, and fixed by adhesion; the capsule of the lens had a chalky white appearance. The muscles of the lids and of the globe were in no degree enfeebled, and they moved consentaneously with those of the companion eye. The perception of bright light was not quite extinct.

The history of the disorganised globe, and of the symptoms of which it became an excitant, is as follows. In 1851, while the patient was in good health, a bit of iron struck the right cornea; it was immediately removed by an experienced surgeon. Severe inflammation ensued, which destroyed the sight and disabled the patient from his employment for two months. For three or four months, beyond the loss of vision, no sort of inconvenience was experienced. The ophthalmia, however, now recurred, and has continued so to do three or four times in every year up to the present time. These inflammations were marked, he states, by redness of the eye, a sense of burning over the surface, and stabbing pains through it, accompanied by a serous discharge, which seemed to relieve the pain in proportion as it was abundant. When the eye was not inflamed, it became the seat of neuralgia of far more severity as respects pain than the inflammatory attacks. In a paroxysm that I witnessed, the usual symptoms of neuralgia of the ophthalmic branches of the fifth pair were present; viz., morbid sensibility to light, redness of the conjunctiva, epiphora, and tremor of the muscles of the lids and right side of the face. The sensation of the integuments of those parts was so exalted that the gentlest touch of the finger thereon greatly excited the patient, from the almost intolerable agony to which it gave rise. In some of the seizures, "a sensation of a hard substance twisting round in the ball" was present. His family informed me that, on some occasions, his agonies almost deprived him of reason. Causes apparently very slight were productive of pain: for instance, the sudden turning of the globe on its axis, rubbing the lids or face of the affected side with a towel, shaving the submaxillary region, or eating breakfast, occasioned acute lancinating pain within the globe. The omission of these several acts, and resting quietly in bed till midday, with the lids closed, procured comparative comfort. After midday the disposition to the attacks seemed lessened; but for about five years and a half he was never for one day, in his sensations, what he had been previous to the accident. The paroxysms were often concluded, and an interval of two or three hours ease was enjoyed, after a copious watery discharge from the affected part. The left eye, which had been dim in its vision since the occurrence of the primary ophthalmia, but not to such a degree as to prevent reading and other minute exercise of the organ, was sympathetically affected during the paroxysms. With the exception of the vessels which traverse the sclerotic being more marked than natural, its tissues appeared healthy.

Neuralgia of the fifth pair is frequently connected with alveolar or dental irritation, with cerebral disease, with intestinal irritation, or with exposure to malaria or cold draughts of air; but in this case I could not discover evidence of any such morbid agencies being or having been at work; nor that the patient had ever suffered from those constitutional diseases which predispose to nervous pains, such as syphilis, rheumatism, gout, or hysteria. Indeed, the cure of the neuralgia, and the prevention of the recurrent attacks of ophthalmia, appeared only necessary to render him one of the healthiest of men.

Having cleared the case of the possible causes that have been above enumerated, we had no difficulty in positively affirming that the *fons et origo mali* existed within the diseased eyeball—an opinion which was also supported by two important facts, viz., the absence of nervous pains previous to the traumatic injury, and the frequent recurrence of inflammation in the organ afterwards—a symptom which commonly indicates the presence of irritation, mechanical or otherwise, within the eye. The morbid sensibility of the surface of the lids and right side of the face was exceptional and peculiar, and no doubt veiled the real nature of the case from the minds of the scientific and practical men who referred the symptoms to some agency extrinsic to the globe.

With the concurrence and assistance of my sagacious friend Mr. Burdett, who had strongly recommended the patient to abide by whatever decision in regard to surgical treatment I might come to, the eyeball was excised on 25th of July, in the presence of the gentleman named, and his assistant, Mr. Nichol. From that day to the present (Sept. 10th), not a single twinge of the old kind of pains has been felt. In six days after the operation, the orbit was quite fit for the reception of an artificial eye; the patient went out of doors, and expressed himself as feeling better, more comfortable, and as enjoying better sight, than he had done for nearly six years.

I have omitted to state that, on the day of the operation, Mr. P. was suffering from severe neuralgia, which had been present for more than a week.

Case vi. *Excision of a disorganised Eye previous to the Extraction of a Cataract from the fellow-Organ.* J. B., a healthy boatman, residing at Stoke Prior, aged 50, applied to the Birmingham Eye Infirmary, in July 1857, with a green capsulo-lenticular cataract in the *right* eye, the pupil of which was widely dilated and fixed, and the iris orange-coloured; to the strongest sunlight the eye was blind, and had been so for the last three years. No pain had ever been felt in it.

The *left* eye was healthy, with the exception of a completely formed lenticular cataract. There were no cardiac murmurs.

Holding the views that have been above enunciated in regard to the possibility of a painless and uninflamed disorganised eye sympathetically affecting the fellow-organ, I excised J. B.'s right eyeball on July 8th. He soon afterwards returned home. On August 8th, I extracted by the upper section the left cataract without accident to the iris or vitreous humour.

The patient was discharged with a bright active iris, a renewed central pupil, and good vision.

Case vii. *Excision of the Globe followed by Two Hours Pain only: the Parts healed in Three Days.* J. H., aged 29, feeble, and of strumous diathesis, entered the Birmingham Eye Infirmary, in August 1857, with disorganisation and cataract of the *right* eye, which had existed from an early period. Inconsiderable pain was occasionally experienced in the part. In the last six or eight months the left eye had gradually failed, and he had become unable to identify persons; my features appeared all in a mist. The pupil was dilated, sluggish, and black.

On the 26th of August, I excised the right globe; only two hours pain resulted from the operation, which was performed under chloroform, as were the two preceding cases. In three days, the conjunctiva was firmly united, and the patient in every respect fit to be discharged. The sight is slightly improved; "more light is seen."

Original Communications.

ON THE ANALYSIS OF UREA IN URINE FOR CLINICAL PURPOSES.

By J. L. W. Thudichum, M.D.

In supposing it to be a recognised truth that the quantity of urea discharged in the urine during given periods of time is the exponent of the most important part of the metamorphosis of nitrogenised matter in the body, I hold it to be an irresistible conclusion therefrom, that, by analysing or determining the amount of urea discharged by a sick person (for example, a fever patient) in his urine, we may determine the intensity with which that metamorphosis is carried on under the influence of diseased action. I also suppose it to be useful with regard to diagnosis and prognosis, no less than with a view to treatment, that we should know the intensity of the change of matter in the system; because I see practitioners of medicine take the greatest trouble in ascertaining that intensity by observing the strength and number of the beats of the heart, the expanse and number of the respiratory movements, the temperature of the surface, the condition of the nervous system, and similar points, all of which could only teach the intensity of the disorder, not its nature, whether it be localised somewhere, or not anywhere in particular. The number and strength of the beats of the heart are excessive in rheumatic fever, and in pneumonia; the existence of both diseases must be ascertained irrespective of the condition of the pulse; but the excitement of the heart is a mark of the greater or less intensity of the morbid affection of the ordinary changes of tissue and matter, and is therefore watched with great attention. As all the factors of the process of oxydation are summed up in the quantity of urea, there is a strong presumption that an accurate knowledge of this point, at the bedside of every patient, would teach us as much as the observation of the assimilation, circulation, respiration, and their subservient functions, taken together. The correct quantity of urea would be an objective symptom in value far surpassing any symptom or group of symptoms that may be present at the time of the examination of the patient; because it must, under all circumstances, be the effect of a prolonged condition, and cannot in the slightest degree be influenced, like pulse and breathing, by causes of a transient nature.

Taking all this for granted, the consideration arises, whether the method of determining the amount of urea is such as to admit of its general application at the bedside of individual patients. The requirement is that the method be accurate, that it be applicable, and yield its result at once, within a reasonable time, to allow of its being included into the account of the patient's condition at the hour when the question is put, when prognosis and treatment are to be decided upon. Any method for analysing urea in urine, which does not yield its result within a quarter of an hour from the time where it has been found desirable to know that result, is, in my judgment, useless for practical or clinical purposes—useless for the diagnosis and treatment of disease at the bedside. Of course, if it is only intended to answer collateral questions—questions of general pathology, which are not intended to influence the individual case, affording the material—then no immediate question of time arises, and accuracy is the only desideratum; and the operator may take not only time, but also *his* time, according to his inclination.

To a method which would give quick results some slight inaccuracies might be forgiven, provided the possible extent of the error be known. Even the saving of great trouble would not counterpoise the advantage of immediate results for the demands of practice. No accuracy of any method can be useful to medical men in the treatment of disease, if accuracy is only to be obtained by the sacrifice of time, of even so short a time as three or six hours. But any proceeding which is neither quick nor accurate is the most useless thing in the world for any purpose whatsoever.

If the reader grants the requirements I have laid down to be correct, then he will agree with me that the only method for determining the quantity of urea in urine, for clinical or practical purposes, which gives immediate results, is the volumetrical analysis of Liebig. If the apparatus be ready, a single analysis may be made in a quarter of an hour; but if many analyses have to be made at a time, nothing is easier than to perform a dozen analyses in the course of an hour. But, if the analyses are to be worth anything, the fluids must be absolutely correct, just as the balance used for other proceedings; and the operator must possess a perfect knowledge of the somewhat intricate proceedings and their theory, in order not to be arrested or led astray by any difficulties that may present themselves. A man, unacquainted with volumetrical methods generally, will require some prolonged training for these analyses, of course providing him to be acquainted with the rudiments of chemistry. The standard solutions being once on sale, I do not apprehend French measure to be any objection to this analysis, as the operator may obtain the graduated vessels as easily as those based upon imperial measure or cubic measure; and, if he requires his results in apothecaries' weight, the easiest calculation will turn *grammes* into grains, and cubic *centimètres* into fluidounces.

As soon as the analysis of urea is to be combined with that of chlorine, the advantages of this method become much greater; for the same proceeding which prepares urine for the determination of urea by the mercurial solution, also prepares it for the determination of chlorine by the other mercurial solution, than which there is not a more accurate analytical proceeding in existence.

The method of Dr. Davy gives, undoubtedly, useful results, so that we may say that it fulfils the first condition—accuracy. The materials are simple, cheap, and easily obtained; and there are no great sources of error. Its simplicity recommends it to all beginners, and all those who dislike more complicated proceedings; but it requires at least six hours, mostly more, for its completion; and is only correct at an average temperature and an average pressure of air, or at a time when the effects of temperature and air-pressure upon gases enclosed in tubes over fluids counterbalance each other, as was the case

during several weeks in August. As soon as this method requires correction for air-pressure and temperature, it takes too much time in calculation, whereby its value as a ready means is much diminished; for to ascertain the volume of nitrogen obtained, to correct that volume for temperature and air-pressure, to ascertain the absolute weight of the corrected volume, and then to calculate the amount of urea in the fraction of urine, and from this the total of urea in the urine of a given time, and all this only six or twelve hours after the question has been put, is by far too troublesome a proceeding to have any chance to be useful for purposes at the bedside.

If many analyses are to be made at one time, the apparatus also becomes more complicated; twelve analyses would require the same number of graduated tubes. But there is one great objection to the analysis, namely, that the officinal liquor sodæ chlorinatæ is not a chemically defined preparation. That obtained in London contains so much carbonic acid, that, when it comes in contact with the solution of salt, a precipitate of carbonate of lime ensues at once, from the large amount of chloride of calcium present in the salt. A diffusion of the hypochlorite then begins, by the precipitate falling to the bottom of the vessel, and new portions of solution of salt coming in contact with the hypochlorite in the tube; so that, if the tube be at all large in diameter, the diffusion may interfere with the result of the analysis. The solution of salt must, therefore, be freed of lime by oxalates before being used for this analysis. But, even then, the solution of salt is inconvenient, as it dirties the fingers, and by no means permits the operator to have what he ought, namely, chemically pure hands and fingers. Dr. Davy replaced mercury by solution of salt, for the sake of cheapness, and in order to avoid calculation for a column of mercury. The calculation for the column of mercury may be avoided by immersing the tube in a deep vessel with mercury, until the mercury inside is on a level with that outside; but the quantity of mercury required precludes cheapness of the apparatus.

Dr. Davy's method is quite safe and accurate, as I have used it. A tube of 100 cubic *centimètres* capacity, and 20 cubic *centimètres* spare room, is filled more than two-thirds (two-thirds and the spare room) with mercury; upon this one-third of the tube is filled with the decomposing liquor. It is then inverted in mercury, in a deep cylindrical vessel. By means of a graduated pipette, with a springcock and long tube, five cubic *centimètres* of urine are now brought into the tube, which is gently raised out of the mercury; the inner branch of the pipette discharges the urine just above the surface of the mercury in the tube, and not a particle of gas or mixture can thus by any chance be lost. I then apply the corrections enumerated to the gas obtained after about six hours, and calculate the urea. A fresh portion of the liquor is also added by means of another pipette, if the urine was concentrated or of high specific gravity, to make sure that all the urea present has been decomposed. All this by no means simplifies the proceeding, but ensures its accuracy. I abhor simplification at the absolute expense of accuracy. I took these precautions after having found that the diffusion from the carbonate of lime may cause a difference of 14 per cent. from the truth; and further, that the liquor sodæ chlorinatæ met with in London frequently evolves some gas, when mixed with urine in Dr. Davy's original manner, before the operator has had time to close the tube with the thumb; and, even if it be closed, some gas and mixture will be forced out of the tube by remaining in the space between the lower meniscus of the mercury and the meniscus of the skin of the thumb pressed against the tube, after the latter is inverted.

Let us now compare with this the attempt of Dr. C. Handfield Jones to simplify Dr. Davy's method (British Medical Journal, Aug. 22nd, 1857, p. 712). Dr. Jones calls his proceeding a modification of Dr. Davy's mode of determining the amount of urea. I am astonished to find a proceeding against which Dr. Davy has especially provided in the following words: "The amount of mercury employed should, as a general rule, be never less than the volume of gas produced; for, if the volume of gas evolved be more than that of the mercury used, it will be more than that of the solution of salt, and therefore some of the mixture of urine and hypochlorite will be forced out of the tube before it is completely decomposed, and consequently some of the gas will be lost; so that, if this occur, we must repeat the experiment, using either a larger quantity of mercury, if our tube will allow, or diminishing the quantity of urine employed." In direct violation of this precaution, Dr. Jones omits the mercury altogether. The first bubble of gas evolved presses the mixture out of the tube, and so on until a volume of mixture equal to that of the gas evolved is forced out of the tube, and lost for analysis. This proceeding is so much in juxtaposition to method, that it might be called a method for making the determination of urea in urine impossible. Dr. Jones is certainly aware of his loss; he does not determine it; he consoles himself in the following words: "Much of the liquor sodæ chlorinatæ [it should be mixture of urine and liquor sodæ chlorinatæ] is wasted, being expelled by the nitrogen as it collects. *Some loss of urea no doubt takes place; but not much, I think, as scarce any gas is evolved in the lower third of the tube.*" What must be the chemical conscience of Dr. Jones, if, in a quantitative analysis, he permits a loss of urea to take place, which, by means of half a pound of mercury, he might prevent? What must be his care of observation, if he states that, in the mixture, where, by reason, an equal reaction must take place in all parts, no reaction took place in the lower strata; and that, therefore, it might be lost, without an attempt to produce the reaction which is the essence and soul of the entire analysis?

Though I was as much convinced of the utter uselessness of Dr. Jones's proceeding as I am now, I was curious to ascertain the loss of gas caused thereby. Five cubic *centimètres* of urine were decomposed by Dr. Davy's method, and, with my additional precautions, yielded 33 cubic *centimètres* of nitrogen. Another 5 cubic *centimètres* of urine were decomposed over an insufficient amount, namely, about 20 cubic *centimètres*, of mercury. After all the mercury was driven out, there ensued a loss of a considerable quantity of mixture; and, after the completion of the reaction, there were collected in the tube 21 cubic *centimètres* of nitrogen, showing a loss of exactly one-third of the nitrogen actually contained in the urine. And here there were 20 cubic *centimètres* of mercury to be driven out. In Dr. Jones's analysis, the loss of nitrogen, therefore, must be much greater, and must amount almost to one-half of the nitrogen actually contained. This is indeed borne out by the figures of all his analyses, which give a quantity of urea in the urine of fever patients far below the normal quantity in equal periods of time in health; while the fact is, that the quantity of urea in the urine of fever patients, during the rise and acme of the disease, and even after it, is far beyond, sometimes nearly, sometimes more than, double the amount of the normal average.

I tried a modification, and fixed the tube, filled in Dr. Jones's manner, by means of a cock, upon an inverted funnel, which had been ascertained to be large enough to take the whole of the contents of the tube, should the evolution of gas drive the mixture very much downwards. Five cubic *centimètres* of urine of a patient had yielded by Dr. Davy's method, with my additional precautions, 43 cubic *centimètres* of nitrogen. Ten cubic *centimètres* of the same urine in the other tube, fixed upon the funnel, and inverted in salt water, should have yielded 86 cubic *centimètres*, but they only yielded 67 cubic *centimètres* of nitrogen, showing a loss, even with this precaution, of 19 cubic *centimètres* of gas—a loss which was mainly due to the diffusion set up between the mixture in the tube and funnel, and the saturated solution of salt in which tube and funnel were inverted. The solution of salt had been coloured blue by some tincture of litmus. As carbonate of lime fell, the blue colour disappeared entirely, showing that liquor sodæ chlorinatæ, mixed with urine, was diffused through the entire bulk of the salt water (1¼ Winchester quart).

Dr. Jones is modest enough not to suppose his proceeding so accurate as that of Liebig. He believes, however, that it affords, at any rate, results capable of being compared with each other. In my opinion—and I hope, hereafter, in Dr. Jones's opinion—the result of the comparisons is, that one result is as bad and useless as the other.

Dr. Jones has singular ideas of quantities. Thus, in another passage of his paper, he informs us that the acidity of a specimen of urine, per ounce, was represented by forty drops of saturated solution of bicarbonate of soda. I do not suppose that Dr. Jones himself knows the quantity of bicarbonate contained in the forty drops, for a drop is no quantitative definition; it may be large or small, according to the vessel from which it is poured; and many other circumstances, such as adhesion or the reverse, temperature of the fluid, have great influence upon its size. We readers, therefore, who are to be informed of the degree of acidity of a certain urine, are absolutely informed of nothing at all. The quantitative analysis is a sham and a spectre. It is clever enough to take bicarbonate of soda; for, as it is not very soluble in water, a saturated solution is not a very strong alkaline fluid; but the disadvantage lies in the working, for, as two equivalents of carbonic acid have to be removed by boiling, before litmus paper

yields a neutral test, the boiling has to be prolonged in every analysis—for what purpose? Merely to save the trouble of weighing a quantity of carbonate into a measured bulk of water. Here the trouble certainly surpasses the saving at the production of the test solution.

The nature of the analyses for uric acid also helps to strengthen my resolution here publicly to assure Dr. Jones that such analyses are of no use to pathology, to patients, or to readers. If such are to be the fruits which medicine is to ripen from the flowers of chemistry (and I believe both Liebig's and Davy's methods to be flowers of that science, the one by its profound shrewdness, the other by its great simplicity), we had much rather beg chemists not to trouble themselves in our behalf. We have long been sighing for a method to analyse urea and determine its quantity. Scarcely are we presented with a good one, when up start a series of incompetent critics and dissatisfied reformers, the first to find a thousand fallacies where nothing is fallacious but themselves, the others to deform by their intended reformation. I have heard Liebig's method declared to be fallacious by men who had never as much as read it, and who were not only utterly incompetent to try it, but also so destitute of the elements of chemistry as confidently to pronounce nitrate of baryta the best means for absorbing carbonic acid. To be sure, the best of us are liable to error, but always open to correction; it is, however, difficult to cure errors in principle. Our present morals in medical chemistry are rather lax as regards quantities. My intention in this article has been to contribute towards making them a little more stringent.

CASE OF RHEUMATIC PARALYSIS.

By Benjamin Dulley, Esq., F.R.C.S., Wellingborough.

[*Read before the South Midland Branch, May* 21, 1857.]

The patient was a man, E. S., aged 32, married, living at Wellingborough, in a somewhat damp house, but in a very healthy situation. He was by trade a shoemaker, and up to January 1856, had always, with slight intermissions, enjoyed good health. On the 16th of that month, he was attacked with severe pain in the bowels, which were tender and constipated: but he was soon relieved by purgatives, combined with calomel and opium.

On February 3rd, he began to complain of acute pain in the left shoulder and elbow-joints, accompanied by heat, thirst, and restlessness. On the second day, the pain extended to the left arm, then to both hands and wrist-joints, which were slightly swollen. In about a week or ten days the severity of the symptoms had in some degree ceased, but then the pain was felt extending down the back to the hips, knees, and ankles. Again, the febrile symptoms were renewed; the tongue became furred, the pulse quick, the urine scanty, and with bright red deposit; the breathing rapid and jerking; and he had occasional delirium. This state continued for six weeks. The treatment consisted of antimony, opium, and small doses of calomel; afterwards, when the lower limbs became affected, colchicum with bicarbonate of potash was added to the other remedies with marked benefit. The febrile symptoms gradually subsided, but unfortunately left the patient weak and incapable of the slightest movement. Paralysis seemed complete in all the voluntary muscles; but the patient retained his power over the rectum and bladder. Week after week now passed with no amendment; blisters and other irritants were applied to the spine; the patient took quinine, ammonia, iron, iodide of potassium, and zinc, in succession, and had the continued daily use of electro-galvanism up to June 21st. At this time, he had only so far recovered as to be able to move his neck freely, the right arm stiffly, and in some degree the fingers of the right hand. At this date, he was carefully conveyed to the Northampton Infirmary, and there most assiduously attended by Dr. Webster (who took a great interest in the case) for four months, but returned with his paralytic symptoms unalleviated.

At the present time (May 21st, 1857), more than fifteen months from the commencement of the attack, his health is good; he eats and drinks well; indeed, he gets fat and looks cheerful; he can move his head in all directions; he has the power when in bed of rolling from the left side on to his back, which is a great relief; he can move the right arm, but the hand is drawn back and incapable of much flexion; with difficulty he can grasp a fork, but is unable to feed himself. The left arm lies by his side useless; nor can the hand be flexed or brought up to the head. The right leg he can move freely when lying on the left side, but cannot draw it upwards. The left leg is useless. There is no swelling in any of the joints. He has no difficulty in passing either urine or fæces: the former is of healthy character and sufficient quantity. The bowels are generally moved once a day.

He has never had any loss of feeling; and has rather an exquisite sensitiveness to the least touch throughout the whole body.

Remarks. There is no novelty in rheumatic paralysis; and the present case was introduced to the attention of the meeting for the purpose of inviting discussion as to the nature and causes of paralysis in rheumatic fever. It was also desired to educe the practical experience of those members who had met with cases similar to that of my unfortunate patient; and to ascertain if any plan of treatment had been devised for alleviating so great a calamity. It was suggested that a general long continued use of the iodide of potassium was an important and frequently a successful remedy; as was also the frequent application of blisters to the spine, combined with attention to the state of the health generally. These remedies, as well as others mentioned above, had been fairly tried, and, I am sorry to say, had utterly failed.

EFFECTS OF FULL DOSES OF OPIUM.

By Frederick Pritchard, Esq., Stratford-upon-Avon.

Case i. About ten years since, my father and my assistant requested me to visit with them a person of the name of J. C., aged 33, of Shottery, in this neighbourhood, who had been suffering from intussusceptio for nine days. The symptoms were most violent, and accompanied with hiccup, stercoraceous vomiting, subsultus, and every sign of approaching dissolution. The usual remedies had been resorted to without any beneficial effect. I prescribed four grains of solid opium to be administered in the form of a pill. In twelve hours the bowels acted, and the patient speedily recovered, and has continued well from that period.

Case ii. Five years afterwards, my assistant requested me to visit another case with him. The patient, L. R., aged 50, residing at Clifford Chambers, as in Case i, had very nearly the same symptoms, and had been ill for several days before she applied. The same quantity of opium was administered, and on the following day she was relieved, and very soon recovered.

Case iii. Six years since, I was called to a lady, aged 63, with strangulated umbilical hernia, an irreducible one of long standing. I employed the ordinary taxis, and also resorted to the usual means for the purpose of relieving the strangulation, but without effect: vomiting of stercoraceous matter supervened, and the patient appeared to be sinking rapidly. A hospital surgeon was called in consultation; and it was agreed that, in consequence of the severity of the symptoms, as well as the exhausted condition of the patient, an operation was out of the question. The same quantity of opium I shortly afterwards administered, and with the same happy effect, for the bowels acted in the course of ten hours, and she rapidly recovered.

I have given a very brief but truthful sketch of these cases—cases in which I have felt much interested; and my opinion is, that in each the large dose of opium, by acting as a direct sedative, so unstrung (if I may be allowed the term) the bowel, as at once to relieve the intestinal obstruction.

The following case having occurred at the time I was thinking of sending the preceding ones for insertion, I waited to see the result of it; and as so much has been said and published lately respecting idiopathic tetanus, any contribution, I imagine, will be read with interest.

Case iv. On August 22nd, at 8 o'clock A.M., my assistant requested me to visit a person of the name of Richard Brown, aged 27, who he stated was suffering from tetanus, but he could not ascribe the affection to any particular cause. He informed me that when he first saw the patient, he found him in a state of great exhaustion; the pulse was small and fluttering; the extremities cold; and with these symptoms were tetanic convulsions. He prescribed ammonia, opium, and chloric æther, in full doses, and gave the patient a pint of brandy in the course of two hours.

When I visited him, reaction to a certain extent had come on; his pulse was firm, and the state of the skin improved, but the tetanic convulsions had very much increased in severity.

He had violent opisthotonos, the body being completely arched; his eyes were protruded; the face and neck were livid; the breathing laborious; the abdominal muscles were strongly retracted: in fact, all the muscles were so rigid and drawn, that it is impossible to describe the poor fellow's sufferings: added to which, during each paroxysm his penis became so turgid, and, I imagine, painful, that he grasped it violently with his hand, and it was with difficulty that we could get it disentangled.

I ordered him to have an injection of turpentine and assafœtida; to be put under the influence of chloroform; and the abdomen to be rubbed with it. These remedies caused a slight remission of the symptoms; but as soon as the effects of the chloroform were gone, they recurred with equal severity.

I continued to visit him every hour, and both my assistants remained with him, administering chloroform from time to time, and stimulating him well with brandy. At 4 o'clock P.M., the convulsions appeared to be fast destroying him, and having witnessed the good effects of large doses of opium in spasmodic affections, I resolved upon giving him five grains, which I had carefully made up into two pills, which he took with two ounces of brandy. At 7 P.M., the convulsions began to subside, and by half-past 11, they had entirely ceased. He then went to sleep; and at 6 o'clock the following morning, he awoke quite free from pain, and complained only of stiffness. The inhalation of chloroform was continued until 10 P.M., by which time six ounces had been administered.

During Saturday, he was unable to answer any questions, and I was therefore in the dark as to the cause of his illness; but on talking to him on Sunday, he told me that on the preceding Friday he ate some berries which he gathered off the hedge by the road-side; that they made his mouth feel hot; but beyond that he did not experience any inconvenience.

I sent into the country, and had some dulcamara and bryony berries gathered, and as soon as the man saw them, he selected the bryony as those of which he had partaken, and said that he had eaten about thirty.

Remarks. The peculiarity of this case is, there being no symptoms of poisoning prior to the attack of tetanus. Orfila mentions that bryony-root causes vomiting, fainting, violent pain, profuse alvine evacuations, etc. Pye mentions a fatal case from taking two glasses of an infusion of the root to cure an ague. Tormina and purging soon followed, and the patient sunk under it.

Whether the recovery of this man is due to the treatment, I will leave others to judge. The effects of the chloroform in at once relaxing the muscles, and removing all rigidity and pain for the time being, I think perfectly justified me in continuing the use of it for such a lengthened period. The administration of so large a dose of opium may be questioned; but when I saw the patient was being worn out by the convulsions, and when I recollected the beneficial results in the preceding cases of intestinal obstruction, I made up my mind to give it a trial.

In regard to the poisonous effects of bryony, I hope to gather more information from the leading toxicologists of the day.

Periscope.

PRACTICE OF MEDICINE AND PATHOLOGY.

CONTRIBUTIONS TO THE THEORY OF EPIPHYTES.

The *Dublin Quarterly Journal of Medical Science* for May last, contains a translation of an article on the above subject by Dr. Edward Koch, of Würzburg.

It was pardonable that investigators who had never succeeded in discovering fungi in mentagra should deny their occurrence or their pathognomonic signification in this disease; it is, on the other hand, surprising that the fungus in favus should at the present day be considered as an *accidental* product of albuminous transudations (Didot), and, accordingly, as unessential to that affection.

The general condition necessary to the growth of fungi on the human body is their transference from without to such parts as present the conditions essential to their development. Gudden has very well described the circumstances favourable to the growth of fungi on the integuments; but he has, it seems to me, omitted a very important element in the causation of the origin and spread of pityriasis versicolor, namely, morbidly increased secretion of the perspiration, coexisting with a neglected state of the skin. That this cause of the development of pityriasis is very active with respect to the fungi on which it depends, is evident, first of all, from its frequent occurrence in phthisical subjects convalescent from typhus, and, in general, in patients affected with permanently or temporarily increased cutaneous secretion, in whom, either from carelessness or from caution, bathing or washing of the skin is omitted.

Thus Dr. Koch remembers some patients of this description who were covered literally from head to foot with scales of pityriasis, but in whom he, unfortunately, did not employ microscopic examination, and can therefore not answer for the existence of fungi in their cases, nor can he insist on the existence of the latter in *all* cases of pityriasis after typhus, as he has convinced himself of their presence in only five or six such convalescents. The parts of the body most liable to circumscribed pityriasis might be adduced as a further confirmation of this view. Thus, it is particularly apt to attack the trunk, which is much more easily and frequently the seat of increased perspiration than the extremities; and if we examine more closely, we shall find that the parts most inclined to perspiration, from the neck down to between the scapulæ, the spaces above and beneath the clavicle, the axillæ, particularly the parts about their anterior portion, are most frequently and intensely attacked. In the latter situation, as well as between the breasts, he has very frequently observed it in women. He cannot give a general assent to Gudden's statement, that pityriasis versicolor in particular is of so very rare occurrence in women. This opinion may have arisen from the greater reluctance of women, for many reasons, to consult the practitioner for a few such spots, and also from the less chance of the accidental discovery in them, during medical examinations of other kinds, of the existence of such an affection, in consequence of their unwillingness, without absolute necessity, to expose the parts just mentioned. But if the physician is more frequently compelled to make such examinations in an hospital for syphilitic or cutaneous affection in the female, he will very soon be convinced that pityriasis occurs perhaps as frequently in women as in men. In children, on the contrary, it is certainly very rare; in the latter, profuse perspiration occurs less frequently, and more attention is generally paid by adults to the cleanliness of their skin, than grown people are wont to bestow upon themselves. Gudden further quotes the case of a man who was in the habit of leaving his chest exposed, and in whom the middle part of it remained free from pityriasis, certainly only because it was less liable to profuse perspiration, and because the latter was immediately dried by the access af air.

In pityriasis, the fungi grow chiefly in the external horny layers of epidermis; in favus, on the contrary, they are developed in the hair follicles, where they increase to form great scabby conglomerate masses, the so-called individual favi (*Favus-Individuen*). Leaving out of consideration that we have here to do with two different species of fungus, a strict separation of the two forms, as essentially distinct affections of the skin, is certainly justified even by the external microscopic phenomena. For the same reasons, as little can identity be maintained between favus and herpes tonsurans, or between pityriasis and the mentagraphyt described by Gruby.

Thus, in herpes tonsurans, the fungus is situated almost exclusively in the hairs, and in their fibrous substance; at least, Dr. Koch was enabled, in almost all the hairs he examined, to establish the freedom of the medullary substance from the affection. In the fine whitish scales of epidermis surrounding the diseased hairs, he has, on the closest examination, but very rarely found some few sporules, but never could discover such great masses as Hebra and Bärensprung mention. These small quantities of sporules must have been derived from the bursting and breaking of the hairs filled with them into the adjoining layers of epidermis. But even should Bärensprung's assumption be correct, that the growth of the fungi begins in the epidermis, and finds its way thence into the hairs, it is still in the hairs that the process, in this form, is to be considered as predominant and essential. If, on the other hand, in favus, hairs are found, here and there, containing fungi, this is certainly so rare as to be considered an incidental occurrence; while, in this case, the formation of the scabby fungous convolution around the hairs—whether isolated or confluent is indifferent—is to be considered as characteristic.

The arrangement of the fungi in the hair, in herpes tonsurans, Dr. Koch has, in general, found to be such as Malmsten and Bärensprung have described. They lie as garland-like, undivided strings of sporules between the fibres of the cortical substance, leaving the medullary portion intact. The hairs are broken off very short, so that, when pulled out, they are only a few lines long; they have a dirty-white colour, and are swollen, thicker than the unaffected hairs, and very brittle.

Both the upper and under (radical) extremities of these stumps of hair are, in general, splintering and broom-like, and the strings of fungi extend from the middle portion out between the splinters of the two extremities, so that it is hard to determine whether the fungi grow out from the root, or whether—as Bärensprung considers to be possible—they grow, after the fracture of the hair, through the fractured end into the fibrous substance. Dr. Koch would be inclined to look upon the former as the more probable, namely, that the fungus is developed in the root-sheath, and that it penetrates thence into the upper part of the hair. The growing-in of the fungi from the top of the hair would indeed be proved, if Küchenmeister's statement were correct, viz., that, first of all, a round heap of sporules forms in the root of the hair. But he looks upon this as impossible, since, in every diseased hair of the kind, the top breaks off in extraction; besides, it is more than improbable that a growth of fungi could arise in the centre of the root, without transference from without. Opposed to Bärensprung's view, that the fungus reaches the hair also through the upper fractured extremity, and grows thence downwards, it is yet the fact, that such hairs have never been found having their upper end filled with fungi, and their lower part still free therefrom; not to mention that, were such a process going on, the fungi should be found more abundantly in the epidermis than is really the case.

Dr. Koch has not as yet had an opportunity of observing the *Microsporon Andonini*. On the other hand, he has, in two cases of mentagra, succeeded in discovering the *Microsporon mentagraphytes*, and on both occasions as a dense layer of little round sporules situated between the roots of the hairs and their sheath, its limits superiorly coinciding exactly with those of the hair follicle. Fungoid filaments he has as yet not seen in this form of disease.

If we now consider once more the situation of the fungus in the four forms spoken of, viz., Pityriasis, Favus, *Herpes tonsurans*, and Mentagra, we find it to be in Pityriasis in the external layers of epidermis, leaving the hairs and their sheaths free; in favus in the hair follicle, leaving the lower parts of root-sheaths always (Gudden), and the inner part of the hair most frequently, free; in *Herpes tonsurans*, in the fibrous substance of the hair, with but slight implication of the scales of epidermis surrounding the hair; in metagra, in the inner root-sheath of the hair, leaving the hair, the hair follicle, and the surrounding epidermis free.

Did we now assume, that some of these forms of disease depend on the same species of fungus, which, however, is not the case, this constant difference of the tissue attacked should warn us to discriminate between the diseases in question. Gudden, on the other hand, correctly maintains that all varieties of favus are formed of one and the same species of fungus, and are only determined by the greater or less reaction of the cutis against the intruder, and by the degree of growth of the latter. This is not true of favus alone; it is equally so of all the forms mentioned. It is accordingly a matter of indifference, with respect to determining the nature of the disease, whether we find the crusts of favus on a dry part of the skin or on one affected with eczema, or meet them bathed in pus, the favus crust is distinctive. It was certainly a useless and superfluous dispute which was carried on, whether *Herpes tonsurans* commences with eczematous or herpetic vesicles, with papulæ or pustules; the *Trichophyton tonsurans* in the hairs is the essential point, and according to the degree and duration of its growth and the sensibility of the skin in the part affected will the case be attended with simple exfoliation of the epidermis, the formation of smaller or lesser vesicles, pustules, or even abscess.

It is further equally self-evident that, according to the different seat of lodgment of the fungus, the reaction of the skin in each form will in general vary. Thus we find in pityriasis, where it is superficially situated, for the most part no reaction of the skin, and a slight redness only when the process is very intense, or the skin tender. In favus, in which the fungus begins to grow in the hair follicle, a small yellow vesicle first forms around the latter, and soon dries; under the gradually increasing crust the cutis atrophies; if the scabs increase very much, or coalesce to form extensive crusts, the irritation excited is of course greater, and the more so as washing is very much impeded, and consequently superficial suppuration easily takes place under the crusts, though in most cases without considerable swelling of the skin. Wholly isolated crusts of favus may, if the atrophy of the cutis is once accomplished, exist a long time without any reaction of the surrounding parts. Thus, Dr. Koch once found, on the lower part of the left thigh of a girl suffering from constitutional syphilis, two isolated scabs, of the size of a six-kreuzer piece (equal in size to our penny), of a dirty-yellow colour, round, and smooth on the surface. He at first thought they were the scabs of dried pustules, but they separated, and he was surprised not to see the least redness of the surrounding parts, and the patient asserted that she had had them more than a year. They were convex inferiorly, and the corresponding cutis was atrophied. On the upper surface was a small, central, bowl shaped depression, leading to a fine little aperture perforating the entire crust. Microscopic examination showed them to be crusts of favus. The patient stated that she never had favus on her head.

Now, in mentagra, where the fungus penetrates to the deepest parts of the root-sheath, leaving the follicle free, we see the cutis first swell, producing node-like tumours, while a continuance of the affection gives rise to burrowing abscesses, with the subsequent formation of crusts. Thus he has, in one case, removed undermined crusts of the size of a half-florin piece, and from two to three lines in thickness, the numerous hair follicles projecting far, bathed in pus on their under surface. The nature and situation of the fungus are best studied on hair follicles removed in this manner.

Finally, in the last patient affected with favus whom he had an opportunity of examining, invariably he found in all the scabs peculiar bodies of a light green colour, and for the most part of a regular round shape, about double the size of the sporule cells, and consisting of a membrane in general containing from one to four smaller granules, apparently of a darker shade of green. He does not remember to have seen these bodies mentioned in any description of favus, nor had he himself observed them in his earlier investigation of such scabs; consequently, he cannot pledge himself that they are a constant constituent of the scabs in favus. However, it struck him as remarkable that in this one patient he found them in tolerably large numbers mixed with the fungi, and especially where the filaments were most crowded. In order to guard against the possibility of deception from the accidental conveyance of foreign bodies to the surface of the scabs, he cut several of the latter obliquely through the centre, and shaved off small portions from the innermost part; but in the objects thus obtained, he still found the green globules above described in numbers equally great. He does not venture to draw any conclusion from this observation of a single case; but he is inclined to believe that the chlorophyll bodies in question could not accidentally have got into the scabs. (*Virchow's Archiv*, Band x, Heft 3, 1856, page 317.)

British Medical Journal.

SATURDAY, SEPTEMBER 19TH, 1857.

THE MANAGEMENT OF THE INSANE IN SCOTLAND.

Our readers, being acquainted with at least an outline of the history and constitution of the kingdom of Great Britain, are of course aware that the laws and institutions of Scotland are, as a general rule, distinct from those of England. That is to say, for example, the provisions of the English Poor-law, of the Lunacy Act, of the recent Divorce Act, and so forth, have no force north of the Tweed. Hence some of the institutions of our Scottish neighbours may be in advance of ours, while others may be as much behind the requirements of the age. An illustration of this is afforded by the condition of lunatics in Scotland, as exhibited in the able and elaborate Report of a Royal Commission appointed in April 1855. We have endea-

voured, and will continue to endeavour, to inculcate the necessity of reforming the treatment of our English insane. But in England we have arrived at something like systematic arrangement: some kind of definite legal provision is made for the lunatic. In regard to Scotland, on the other hand, there has indeed been some attempt at legislation of a very imperfect kind; but chaos and confusion have reigned supreme in the affairs of the insane part of the population. One or two extracts from the recapitulation given by the Commissioners at the end of their Report will give some idea of the disgraceful state of affairs to which we allude.

"There are in Scotland at least 7,403 persons of unsound mind. Of these, 4,642 are pauper patients, a proportion which, though large, does not, as we have shewn, fully represent the number which might be set down under this head.

"No national provision whatever has been made for the accommodation of the insane poor of Scotland, and they are therefore altogether dependent on the benevolence of the public, who have, in some measure, supplied the want by erecting asylums in the more populous districts, capable of accommodating 1,511 patients, leaving 3,131 still unprovided for.

"Even in the southern portions of the kingdom, where the chartered asylums are situated, great difficulty is experienced in obtaining admission for pauper patients belonging to the neighbourhood; and extensive districts in the north are left without any accommodation whatever.

"The consequence of this want of public accommodation is, that numerous private houses have been opened for the reception of pauper lunatics. These houses have been licensed without due examination as to their fitness for asylums; and no limitation of the number or sex of the patients to be admitted has been made: nor has due regard been had to the qualifications of the proprietor, or to his means of providing proper lodging, board, and treatment.

"The premises are in most cases totally unsuited for the purpose of asylums, and are crowded in an extreme degree. The patients are badly lodged within doors, and are scarcely ever allowed to walk beyond small yards surrounded by high walls. They are generally scantily fed and clothed, and are provided with but a meagre amount of bedding, which is often of the worst kind. They are frequently subjected to mechanical restraint and seclusion, and are occasionally stripped naked and placed to sleep together on loose straw cast into rudely constructed bed-frames. They have few or no means of recreation or occupation, and scarcely any suitable books. The attendants and nurses are not in sufficient number, and their wages are too low to secure the services or continued stay of efficient persons. Generally, no religious exercises, or other agencies calculated to elevate the moral tone of the inmates, are employed, and scarcely anything is done to break the cheerless monotony of their existence.

"The statutory records would, even if kept, give only a very imperfect account of the treatment of the patients; but in none of the licensed asylums have the entries or returns been made in a satisfactory manner, and, in some of them, the necessary books and forms have not even been procured. No record has been made of the mechanical restraint to which the patients are habitually subjected in some of these houses; and, the statutes not requiring that any account of seclusion shall be kept, the solitary confinement employed is in no way set forth in any of them. There are no rules or regulations to secure the proper treatment of patients whilst in these houses, nor is there any legal requirement that a patient, when recovered, shall be discharged.

"Violent and also quiet patients, are, pending investigation of their cases by the sheriff, often improperly and cruelly detained in jails for considerable periods, during which they are deprived of all means of treatment, and their malady rendered more obstinate.

"Unlicensed houses have been opened, as trading concerns, for the reception of certain classes of patients, who are detained in them without any safeguard whatever against ill treatment or abuse.

"A very large number of single patients are detained at home, or illegally placed in the houses of strangers. The generality of these are in a most destitute condition, being badly lodged, ill fed, scantily clothed, and not provided with sufficient bedding. A few are subjected to personal chastisement; some are permanently chained; others are placed in outhouses, or are locked up in small closets just capable of holding them. Many are filthy in their persons, infested with vermin, covered by mere rags, or allowed to remain perfectly naked. Some are without bedding, except loose straw or heather cast on rough boards, and their rooms emit a most intolerable stench. Others, again, are homeless, and are allowed to wander at large."

The sheriffs in Scotland are the only functionaries specially entrusted with the care or guardianship of insane persons. Yet the practice of these officers in regard to the inspection and licensing of private asylums, the medical certificates required for the detention of lunatics, and other matters, has been utterly destitute of uniformity, and very often most lax.

Things being so, Parliament, under the guidance of the Scottish Lord Advocate (Moncrieff) and Sir George Grey, set themselves to work in the last session to mend matters somewhat, and to provide better for the care of the three thousand uncared for, and the fifteen hundred somehow cared for, pauper lunatics: as well as for other matters of more or less moment in relation to all these unfortunates of every class. The Act "For the Regulation of the Care and Treatment of Lunatics, and for the Provision, Maintenance, and Regulation of Lunatic Asylums, in Scotland," received the Royal assent on August 25th, and will come into force on January 1st, 1858.

One of the first and most important provisions in the Act is the formation of a Board of Commissioners in Lunacy for Scotland.

"IV. There shall be constituted for the purposes of this Act a Board, to be called the General Board of Commissioners in Lunacy for Scotland, in manner following:—

"1. Three persons shall be appointed by Her Majesty, one of whom shall be an unpaid commissioner and chairman of the Board, and two of whom shall be paid commissioners, and shall receive such salary, not exceeding one thousand two hundred pounds each per annum, as shall be fixed by the Commissioners of Her Majesty's Treasury.

"2. It shall be lawful to Her Majesty, as often as shall seem expedient, by warrant under the hand of Her Majesty's principal Secretaries of State, to appoint not more than three persons in all at one time, to be unpaid Commissioners in Lunacy, for such period as may be specified in such warrant.

"3. All vacancies in the Board may be supplied in like manner from time to time as they occur."

It is to be observed, that the original draft of the Bill provided that one of the said Commissioners, and *one only*, should be a medical person: and that the chairman of the Board should *ex officio* have a seat in the English Board of Commissioners in Lunacy.

Other clauses provide for the appointment of a Secretary and a Clerk, and, if necessary, of two "medical persons" to be Deputy Commissioners, at a salary not exceeding £500 a year each. At the end of five years, the General Board now appointed is to cease, and the two paid Commissioners are to become "Inspectors-General in Lunacy for Scotland, subject to the orders and direction of one of Her Majesty's principal Secretaries of State." Provision is also made for the regulation of licenses for private asylums, of orders and certificates, and for the establishment of district asylums for the reception of the insane poor.

We have before us a list of the appointments made to form the new Board. There are *three* unpaid Commissioners; viz., Viscount Melgund, M.P. for Clackmannan, as Chairman; Sir Alexander Maitland, Bart., of Mid Lothian; and George Young, Esq. The office of Secretary has been bestowed on Mr. Forbes of Medwyn, a Scottish advocate. Both the paid commissionerships, we are gratified to be able to announce,

have been bestowed on two members of the medical profession, highly deserving of the trust, and from whom much is to be hoped in the way of improvement of the system of treatment of the insane.

Dr. James Coxe of Edinburgh is well known as having long been a careful student of psychological as well as of general physiological science. He was one of the members of the Royal Commission of which we have spoken, and is reported to have had the principal share in the framing of the excellent Report issued by that Commission. He is also said to be the author of an excellent popular letter on the lunatic colony of Gheel, published very recently in the *Scotsman;* and we are glad to find that he is in favour of an introduction of the Gheel system, with such modifications as may be required by the circumstances of the case, into Scotland.

Of the high merits of Dr. W. A. F. Browne, the able Superintendent of the Crichton Institution at Dumfries, all who are interested in lunacy affairs must be aware. For many years this gentleman has been engaged as a superintendent of asylums; and for the last eighteen he has conducted the affairs of the Dumfries Institution, which has the reputation of being one of the best, if not *the* best managed in Scotland, and of being even a pattern to many English asylums. He was also the author, in 1837—twenty years ago—of a little work entitled *What Asylums were, are, and ought to be*—a book in which are expressed views of a highly enlightened character in regard to the treatment of the insane. And the practical carrying out of these views has, we may believe, tended to gain for Dr. Browne that high reputation which has now met with a graceful recognition.

While we express our high satisfaction at the excellence of the appointments of Drs. Coxe and Browne, we trust that the rumours which are floating about as to the deputy commissionerships may not be true. It has been noised abroad among the profession and public in Edinburgh, that one of these offices is to be bestowed on Dr. Archibald Cockburn, a son of the late Lord Cockburn. Now we do hope that the Lord Advocate and Sir George Grey will not so spoil their good work as to rashly appoint, as the colleague of Drs. Coxe and Browne, a person whose merits consist, on the one hand, in being the son of a well known Scotch judge, and in having served in the Turkish contingent force during the late war; and, on the other hand, in not being known to have devoted any special attention to the treatment of the insane, and, above all, in having been engaged, about two or three years ago, in partnership with the well known Dr. Pattison, of cancer-curing notoriety. Perhaps Dr. Cockburn has returned to the ranks of legitimate every day medicine; but, even if this be so, decency to the profession would demand that he should undergo a probation of several years before being appointed to a post of honour. And, after all, are there not other and better men in Scotland, who might fill the post—men whose practical knowledge of the treatment of lunatics is a recognised thing? There surely must be.

In giving the above outline of what has been done with the view of improving the state of the insane in Scotland, we have not entered on a full criticism of the new Act as to its probable working. To this we hope to return on a future occasion.

THE WEEK.

A very dreadful accident, by which a father and three children were drowned at Dunbar, on Saturday last, draws our attention to the fact that the means of restoring life in persons apparently drowned are not sufficiently made known to the people. It appears that two young daughters of a gentleman from London, named Wilson, whilst bathing, were carried away by the tide; the father and brother, perceiving the danger, rushed to their rescue; and the whole were unfortunately drowned. The body of the eldest daughter was recovered from the water within ten minutes after the alarm; and we are told that, upon being drawn upon the beach, "she was heard to draw a sigh, but no further evidence of life was given, and all efforts to restore life proved fruitless." Now we have no manner of doubt whatever that a prompt application of Dr. Marshall Hall's "ready method" would have restored this young lady's life, and lessened in some degree the agony of the mother who was destined to witness the destruction of her whole family within a very few minutes. "All efforts", which failed in restoring animation, did not, of course, include the only effectual one—that of simply turning the body, whilst prone, one half turn, and repeating the process until full inflation of the chest takes place. We cannot of course blame the bystanders for not putting in operation a plan of procedure with which they were doubtless unacquainted, and which is not, we believe, followed out by some of the Humane Societies themselves (the Bristol Society being an honourable exception); but we trust that, in future, every medical man living in the vicinity of dangerous water will not fail to instruct his neighbours how to act in cases of like emergency. One of the great advantages of the "ready method" is, that it requires no apparatus at all; the willing arm of a single person, and the free air of heaven, are all that are required, in the majority of cases, to restore life, when submersion has not taken place for too long a time. Those branches of the Humane Society who still obstinately pursue the old unscientific method of recovery are clearly committing a great public wrong, and lay themselves open to the strongest and most condign censure.

A singular accident was very nearly terminating the life of a most valuable associate the other day, whilst in pursuit of health in his autumn rambles. Dr. Day, the energetic and invaluable professor of medicine of St. Andrew's, in taking an excursion upon Helvellyn without a guide, unfortunately fell into an old mine, happily without further injury than the fracture of his arm. Whilst at the bottom, however, he found that the foul air was such that an immediate escape from it at any price was the only way to save his life. With great difficulty in his disabled state, he was enabled to climb to the edge of the mine, and by holding on first with one arm and then with the other, to procure pure air. In this condition, he was at length found and rescued by another tourist, but not until he was quite exhausted by thus maintaining himself for several hours just without the grasp of death. In all probability, any other gentleman unacquainted with the deadly nature of the foul air, would quietly have remained at the bottom of the pit until help came, and consequently would have miserably perished. We congratulate Dr. Day and the profession upon this fortunate termination of a very ugly mountain adventure. There are few men in the profession that we could find it so difficult to replace as the learned professor, who has done so much to elevate the character of the medical examinations of the very ancient University to which he belongs.

Association Intelligence.

LETTERS AND COMMUNICATIONS.

Letters or communications for the Journal should be addressed to Dr. Wynter, Coleherne Court, Old Brompton, S.W.

Letters regarding the business department of the Journal, and corrected proofs, should be sent to 37, Great Queen Street, Lincoln's Inn Fields, W.C.

BRANCH MEETINGS TO BE HELD.

NAME OF BRANCH.	PLACE OF MEETING.	DATE.
Bath and Bristol. [Ordinary Meeting.]	York House, Bath.	Thurs., Sept. 24, 6¼ P.M.
East York and North Lincoln. [General Meeting.]	Yarborough Hotel, Grimsby.	Thursday, Sept. 24th, 2 P.M.
Birmingham and Midland Counties. [Ordinary Meeting.]		Thursday, Oct. 8th.

Reports of Societies.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

TWENTY-SEVENTH ANNUAL MEETING.

[*Held in Dublin, August 26th, and following days*, 1857.]

[*Continued from page* 780.]

Section of Zoology and Botany, including Physiology.

REPORT OF THE COMMITTEE APPOINTED TO INVESTIGATE THE VITALITY OF SEEDS. BY C. G. DAUBENY, M.D.

Dr. Daubeny alluded to the circumstances which called the committee into existence, and stated, that after planting year after year all the seeds they were able to collect, they had now left but four species of plants whose seeds continued to grow. These were species belonging to the genera Ulex, Dolichos, Malva, and Ipomæa. He exhibited a register in which every experiment, as performed by Mr. Baxter of the Botanic Garden, was detailed. From this register it would be seen that the shortest period for which any of the seeds had retained their vitality was eight years, and the longest forty-three years. Grouping the plants according to their natural orders, the following selected will give some idea of the plants whose seeds retain their vitality longest: Gramineæ, 8 years; Liliaceæ, 10 years; Coniferæ, 12 years; Tiliaceæ, 27 years; Malvaceæ, 27 years; Leguminosæ, 43 years; Rhamnaceæ, 21 years; Boraginaceæ, 8 years; Convolvulaceæ, 14 years; Compositæ, 8 years; Myrtaceæ, 18 years; Umbelliferæ, 8 years; Cruciferæ, 8 years.

Dr. Lankester drew attention to the physiological interest of the Report just read. It would appear that the seeds which retained their vitality longest were those which had least albumen surrounding their embryos, as the Leguminosæ, whilst those which had large quantities of albumen, as the Graminaceæ, lost their vitality soonest.

Dr. Steele stated, that he had planted many seeds obtained from Egyptian mummies, but always failed to obtain any indications of their vitality.

Mr. Moore, of the Dublin Botanic Garden, related an instance in which he had succeeded in producing a new species of leguminous plant from seeds obtained by Mr. John Ball from a vase discovered in an Egyptian tomb. He also stated, that he had picked from out of the wood of a decayed elm, at least fifty years old, seeds of laburnum, many of which had germinated when planted, and produced young trees. He had once grown a crop of young barberry trees by planting a quantity of barberry jam, which proved that the process of preparing the jam did not injure the seed. Many seeds grew the better for being placed in boiling water before they were set.

Dr. Daubeny stated, that seeds did not retain their vitality whilst entirely excluded from the air; that, in order to keep them well, they should be wrapped up in brown paper, or some other porous material.

Mr. Archer stated, that the seeds sent from China in air-tight vessels always failed to germinate. Some seeds kept much better than others.

Mr. Ogilby stated, that some seeds germinated the better for being kept.

Mr. Nevins and Mr. Moore both confirmed this statement, and said, that gardeners were in the habit of keeping cucumber and melon seeds in their pockets in order to ensure their more efficient germination.

ON THE EMPLOYMENT OF THE LIVING ELECTRIC FISHES AS MEDICAL SHOCK-MACHINES.
BY PROFESSOR G. WILSON.

The author stated that, in prosecuting researches into the early history of the electric machine, he did not at first contemplate going further back than the seventeenth century, or commencing with any earlier instrument than Otto Guericke's sulphur globe, of 1670. His attention, however, had been incidentally directed to the employment of the living torpedo as a remedial agent by the ancient Greek and Roman physicians, and he now felt satisfied that a living electric fish was alike the earliest and the most familiar electric instrument employed by mankind. In proof of the antiquity of the practice, he adduced the testimony of Galen, Dioscorides, Scribonius, and Asclepiades, whose works proved that the shock of the torpedo had been used as a remedy in paralytic and neuralgic affections before the Christian era. A still higher antiquity had been conjecturally claimed for the electric Silurus, or Malapterurus of the Nile, on the supposition that its Arabic name, *raad*, signifies thunder-fish, and implies a very ancient recognition of the identity in nature of the shock-giving power and the lightning force; but the best Arabic scholars have pointed out that the words for thunder (*raad*) and for the electric fish (*ra'ád*) are different, and that the latter signifies the "causer of trembling" or "convulser"; so that there are no grounds for imputing to the ancient Egyptians, or even to the Arabs, the identification of Silurus-power with the electric force. In proof of the generality of the practice of employing the living zoo-electric machine at the present day, the author referred to the remedial application of the torpedo by the Abyssinians, to that of the gymnotus by the South American Indians, and to that of the recently discovered electric fish (*Malapterurus Beninensis*) by the dwellers on the Old Calabar River, which flows into the Bight of Benin. The native Calabar women are in the practice of keeping one or more of the fishes in a basin of water, and bathing their children in it daily, with a view to strengthen them by the shocks which they receive. These shocks are certainly powerful, for living specimens of the Calabar fish are at present in Edinburgh, and a single one gives a shock to the hand reaching to the elbow or even to the shoulder. The usages referred to appear to have prevailed among the nations following them from time immemorial, so that they furnish proof of the antiquity as well as of the generality of the practice under notice. The author concluded by directing the attention of naturalists to the probability of additional kinds of electrical fish being discovered, and to the importance of ascertaining what the views of the natives familiar with them are in reference to the source of their power and to their therapeutic employment.

Sir J. Richardson stated, that there were not fewer than eleven genera of fishes known that had the power of giving electric shocks. There was one peculiarity in all these fishes, and that was the absence of scales. In every one of them an apparatus had been discovered, which consisted of a series of galvanic cells put in action by a powerful system of nerves. He read extracts from a letter from Dr. Baikie, now engaged in exploring the Niger, in which that gentleman stated that he had met with an electric fish in Fernando Po, and which Sir J. Richardson believed was identical with the Malapterurus, which had been described by Dr. Wilson, from the coast of Old Calabar. The natives called this fish the Tremble fish.

ON BRITISH NAKED-EYED MEDUSÆ, WITH NOTICES OF SEVEN UNDESCRIBED FORMS. BY MR. JOSEPH R. GREEN.

The author commenced by alluding to the progress which had been made in the study of the Naked-eyed Medusæ since the publication of Professor E. Forbes's monograph; the researches of Agassiz, Leuckardt, and Gegenbaur being more especially dwelt on. He next gave a list of the Acalephæ, which he had hitherto observed on the Dublin coast, in all amounting

to twenty-five species. He then proceeded to describe the seven new species which he had discovered. Three of these he referred to the genus Thaumantias, one to Bougainvillea, one to Equorea, one to Steenstrupia, and one was deemed sufficiently remarkable to induce him to establish a new genus for its reception. It was, in all probability, identical with the medusoids produced from Coryne, as observed in Iceland by Prof. Steenstrup. In this medusa reproduction took place by germination from the tentacles themselves, as also from the tentacular bulbs. He had observed the latter mode to occur in his new species of Steenstrupia. The development of medusoids from *Laomedia geniculata* was next alluded to: in all the cases which the author had himself observed, the medusoids were free and detached, nor in any instance was he able to corroborate the statement of Loven, "that the medusoids merely expanded at the summit of the 'ovigerous vesicle', discharged ova, and then perished." He did not, however, wish to deny the correctness of Loven's description. Allusion was also made to the observations of Dr. T. S. Wright and Mr. C. W. Peach.

Professor Wyville Thompson stated it as his conviction, that the naked-eyed Medusæ were truly species, and not medusoid forms of Sertularian zoophytes. The only families of zoophytes producing medusoids, with which he was acquainted, were the Tubulariadæ and the Campanulariadæ.

The Rev. Thomas Hincks thought that the true nature of the Gymnophthalmatous Medusæ had not yet been demonstrated, and that there was still great reason to believe them medusoid forms of unknown species of zoophytes.

ON THE DISPERSION OF PARTICULAR BREEDS OF DOMESTIC ANIMALS AS CONNECTED WITH THE GREAT ETHNOLOGICAL DIVISIONS OF MANKIND. BY MR. OGILBY.

The author commenced by stating that the power of domesticating animals appeared to exercise a great influence on the civilisation of mankind. Where men had no cattle to attend to or breed, there they always exhibited the most degraded forms of their race. The great object of the paper was to show that certain breeds of sheep had always appeared with particular races of men, and that, at the present day, we had no better guide to the original types of mankind than were afforded by certain races of sheep. The paper was illustrated by maps and diagrams, illustrating the breeds of sheep.

ON THE REPRODUCTIVE ZOOIDS OF COMATULA ROSACEA. BY PROFESSOR WYVILLE THOMPSON.

The author alluded to the history of Comatula, and referred to the fact that the pentacrinal form of this animal was originally regarded as a distinct animal. He had succeeded in dredging this animal, in Belfast Bay, in such a state as to lead him to believe that he had discovered the condition of the animal previous to its assuming its pentacrinal form. He then stated that, in certain stages of the growth of Comatula, he had detected, projecting from the surface of the animal, buds, or zooids, which, on examination, he had found to possess both germ-cells and sperm-cells; and from this were produced the eggs which were subsequently developed into the pentacrinal polyps, from which the mature animal proceeded.

OBSERVATIONS ON THE PLANTS WHICH, BY THEIR GROWTH AND DECOMPOSITION, FORM THE PRINCIPAL PART OF THE IRISH TURF-BOGS. BY MR. D. MOORE.

The varieties of bog were divided into red bog, brown bog, black or turbary bog, and mountain bog,—which, being the names they are best known by, are retained. The differences of colour and consistencies of matter were considered to depend chiefly on the localities where the substances are produced, according as they vary in different degrees of moisture, temperature, and altitude. Iron and some other mineral substances had no doubt something also to do with the colouring. By far the greatest portion of the bogs in Ireland consists of red bog, which varies in depth from ten to forty feet, or more. This variety is the least valuable for fuel, owing to its soft fibrous consistency. It is supposed to have been formed on the sites of extensive ancient lakes, or very wet morasses, which may be inferred from the small quantity of wood found mixed up with it; besides the roots and trunks of trees being mostly found near the edges of the bog, the portions towards the centre being composed of nearly an uniform mass of the *débris* of plants. Although Sphagnums constitute a large portion of this substance, without the aid of the roots and branches of phanerogamic plants to form a kind of framework to bear up the cryptogamic species, the formation of bog could not go on at nearly so quick a ratio as it does. In limestone districts, where the larger species of Chara abound, whose stems and branches are always thickly incrusted with calcareous substances, the deposition of matter takes place faster than it does where those plants are not so common. The *débris* resulting from *Chora hispida* alone, where it grows freely, will soon fill up a shallow pool, so that plants higher in the scale of vegetation can grow on it. According to the Report of the Commissioners appointed to report on the nature and extent of the Irish bogs, upwards of a million of English acres are covered with red and brown bog, more than two third parts of which are westward of the river Shannon. The black or turbary bog is the most valuable for fuel, owing to the great quantity of woody matter it contains. This variety is supposed to have been formed on the sites of ancient forests, as is evident from the large quantities of prostrate trunks of trees and their roots, frequently *in situ*, which are found in it. The kinds consist chiefly of *Pinus sylvestris*, *Quercus robur*, *Betula alba*, and *Alnus glutinosa*, though large quantities of yew, *Taxus baccata*, and some mountain ash, are also found in particular districts. The roots of the oaks are generally nearest the margins of the bogs, resting on the clay or marl bottoms, whilst the Scotch firs occur further towards the centre, and rest on several feet of peat, thus showing that a considerable accumulation of that substance must have taken place before they vegetated on it. These roots are frequently found one above the other, where they have grown, which has led some to suppose that there have been several consecutive and distinct epochs of growth, and that some species of the trees which formed them are not now natives of Ireland. This hypothesis was not considered correct, but rather, that by the gradual growth of the bog, matter accumulated and covered the first tier of roots, and the seeds of contiguous trees, on falling and vegetating above them, grew and formed in their turn another tier, and so on up to the present surface. Mountain bog sometimes accumulates to a great depth on the tops of mountains, at elevations varying from 1,000 to 2,000 feet. The Sphagnums do not enter so largely into the composition of this kind, but their place is supplied by the grey moss, *Racomitrium lanuginosum*. The conclusions Mr. Moore has come to on this subject are the following, namely, that so far as proofs exist, the same plants which are now forming the bogs of Ireland have done so from the bottom upwards, though probably at different ratios, as drainage has increased, and that all the species are still in existence in Ireland which have ever formed any part of them. These formations he considers to be of a more recent date than the glacial epochs of geologists, with probably the exception of that at Lough Neagh, which may have been anterior to that period, but he thought it would be very hazardous to state the species which formed the fossilised wood found there.

Section of Geography and Ethnology.

ON THE PHYSICAL CHARACTERS OF THE ANCIENT AND MODERN GERMANS. BY DR. BEDDOE.

Of no people have the physical characters been more distinctly handed down to us, though there was not the same kind of pictorial evidence on the subject as existed with regard to the Egyptians and other peoples; yet the descriptions of the Germans left by Greek and Latin authors were very full, and many of them tallied remarkably. They were invariably spoken of as a people with fair skins, blue eyes, and red or yellow hair. Niebuhr and Bunsen, however, have expressed an opinion that the Germans of the present day have, to a great extent, lost the physical characteristics which distinguished their ancestors. Dr. Beddoe was, however, disposed to doubt whether the differences in complexion between the Italians and the pureat blooded Germans were more distinctly marked in the first and second centuries of the Christian era than at the present day. Perhaps the authors to whom he had alluded had laid too much stress upon the statements as to uniformity of aspect among the Germans, made by Tacitus, who was led to describe the barbarians as having yellow or red hair and blue eyes, because he observed these physical characteristics among the majority of the people. It was very unlikely that there were not among the Germans some who had black hair and black eyes and complexion, and if such did exist at all it was easy to believe that the gradations of complexion did exist among them, although men with light hair and complexions formed the majority. Niebuhr and Bunsen might also have been led astray, by a mistake, as to the true meaning of the words *flavus* and *rutilus*, as used to denote the colour of hair and complexion. The general result of all the author's investigation went to show that red hair was seldom as common in any district in Germany, as it was in some

parts of Scotland, and even of Ireland. However, in every district which might be supposed to form part of the original homeland of the Gothic races, fair hair and light complexions were in excess. The fairest hair was to be found in Grovangen, East Friesland, West Friesland, and Brunswick. The proportion of light eyes by no means corresponds with that of light hair. It was greatest in the district of Grovangen, where about four-fifths of the population had red, light, grey, or blue eyes. In Flanders the proportion was little more than half. The combination of blonde hair with hazel eyes was common in Germany and in the Saxon parts of England, but rare among Celtic populations. The Austrians differed greatly in appearance from the other Germans, and among them was a large proportion of persons having dark hair and eyes. On the whole the Germans were, in the time of the Romans, a people fairer than the Gauls, and much fairer than nations which inhabited southern Europe, and this description applied equally to them at the present day.

Section of Mathematical and Physical Science.

ON THE DIRECTION OF GRAVITY AT THE EARTH'S SURFACE.

BY PROFESSOR HENNESSY.

If the earth's surface be considered to coincide with that of the liquid which covers three-fourths of the entire spheroid, gravity should be considered as perpendicular to it at every point. If, however, the earth were stripped of all its seas and oceans, the surface would present considerable inequalities. From what is now known regarding the depth of the ocean, the continents would appear as plateaus elevated above the oceanic depressions to an amount which, although small compared to the earth's radius, would be considerable when compared to its outswelling at the equator, and its flattening towards the poles. The surface thus presented would be the true surface of the earth, and would not be perpendicular to gravity. If a kind of mean surface be conceived intersecting this, so as to leave equal volumes above of elevations, and of depressions below it, it is not allowable to assume that such a surface is perpendicular to gravity. The mean surface of the solid crust of the earth would not be perpendicular to gravity, if, after the process of solidification had commenced, any extensive changes in the distribution of matter in the earth's interior could take place. If the fluid matter, in solidifying, underwent no change of volume, the forms of the strata of equal density within the earth would be the same at every stage of its solidification. But if, as observation indicates, such fused matter, on passing to the solid crystalline state, should diminish in volume, the pressure on the remaining strata of the fluid would be relieved, and they would tend to assume a greater ellipticity than they had when existing under a greater pressure. The general result of this action would manifestly be to produce a change in the direction of the attractive forces at the outer surface of the solid crust. The direction of a plumb-line would be slightly altered, so as to slightly increase the apparent latitudes of places over a zone intermediate between the equator and poles.

The President (Dr. Robinson) stated that he was the first to direct attention to those changes of level which depended on the season of the year. This he was led to observe from the fact that the entire mass of rock and hill on which the Armagh Observatory was erected was found to be slightly, but to an astronomer quite perceptibly, tilted or canted, at one season to the east, at another to the west. This he had at first attributed to the varying power of the sun's radiation to heat and expand the rock throughout the year; but he since had reason to attribute it rather to the infiltration of water to the parts where the clay, slate, and limestone rocks, met in their geological arrangement. The varying quantity of this through the year, he now believed, exercised a powerful hydrostatic energy, by which the position of the rock was slightly varied.

ON THE AMOUNT AND FREQUENCY OF THE MAGNETIC DISTURBANCES, AND OF THE AURORA, AT POINT BARROW, ON THE SHORES OF THE POLAR SEA.

BY MAJOR-GENERAL SABINE.

Point Barrow is the most northern cape of that part of the American continent which lies between Behring's Straits and the Mackenzie River. It was the station of H.M.S. *Plover*, from the summer of 1852 to the summer of 1854. In this most dreary and otherwise uninteresting abode Capt. Maguire and his officers happily found occupation during seventeen months in observing and recording every hour the variations of the magnetic and concomitant natural phenomena. Their observatory, placed on the sand of the shore, which for a long tract nowhere rose much above five feet above the sea, was constructed of slabs of ice, and lined with seal-skins. The instruments had been supplied by the Woolwich establishment, with the requisite instructions; and the observations were made and recorded precisely in the same manner as those of the colonial magnetic observatories. These were sent by Captain Maguire to the Admiralty, and were in due course transmitted to General Sabine, by whom they were subjected to the same processes of reduction as those made in the colonial observatories. The author then exhibited to the Section six long rolls, containing the results of this discussion, giving the reduced observations at each of the hours of the twenty-four. A sufficient body of the larger disturbances having been separated from the rest, it was found at Point Barrow as elsewhere, wherever similar investigations had been made, that, in regard to the frequency of their occurrence, and the average amounts of easterly and westerly deflections, the disturbances followed systematic laws depending on the hours of solar time. The laws of the easterly and westerly were also found at Point Barrow, as elsewhere, to be distinct and dissimilar. Upon instituting a comparison between the disturbance laws at Point Barrow and Toronto, it was found that the laws of the deflections of the same name at the two stations did not correspond; but, on the other hand, there existed a very striking and remarkable correspondence between the law observed by the easterly at Point Barrow and the westerly at Toronto, and between the law of the westerly at Point Barrow and easterly at Toronto; and this correspondence was shown to exist, not in slight or occasional particulars only, but throughout all the hours in well marked characteristics of both classes of phenomena. The importance of eliminating these disturbances from the regular march of the solar variation was then pointed out in both; for when the diurnal variation is derived from the whole body of observations at Point Barrow, retaining the disturbances, the westerly extreme of the diurnal excursion, which, as is well known, occurs generally in the extra-parochial part of the northern hemisphere a little after 1 P.M., is found to take place at 11 P.M.; but when these larger disturbances are omitted, the westerly extreme falls at the same time as elsewhere—viz., 1 P.M. It appears, then, by a comparison of the Point Barrow and Toronto observations, that, in the regular solar diurnal variation, the progression at the two stations is similar; whilst in the disturbance diurnal variation this progression is reversed. Another distinction exists in their magnitude; and it would appear that the absolute disturbing force must be much greater at Point Barrow than at Toronto. The author then proceeded to point out the concomitant occurrences of the auroral manifestations. The observers noted at each hour whether or not there was an auroral display: from 11 A.M. to 3 P.M., no auroral displays were ever observed; but the number of them was found progressively to increase from 3 P.M. to 1 A.M., and then again in regular progression to decrease to zero at 11 A.M. The frequency of the occurrence of the aurora may be judged of, when it is said that during six months—December, January, and February, of 1852-53, and the same of 1853-4—the aurora was seen six days out of every seven. The hour of the day at which no auroral display is ever observed corresponds with the minimum of westerly disturbance, while the maximum of both is found at the same hour of westerly disturbance, viz., 1 A.M. The frequency of the aurora also, and the amount of westerly deflection of the magnet, also accord; whilst, on the other hand, the auroral hours appear to have little or nothing in common with the turning hours or the progression of the easterly deflections. When Sir John Franklin was going out on his last expedition, he had been furnished by the Admiralty with instruments carefully adjusted and compared with standards, and with full instructions; and, in the last letter which had ever been received from him, he had expressed his determination to put up those instruments at the several stations at which he should winter. There could remain no doubt that such observations had been made and recorded, and that these records still existed in some of the places he had last been in. When he (General Sabine) was with Captain Parry, in 1818, they had made observations with the pendulum for determining the figure of the earth, and others of great scientific importance, on their way towards Behring's Straits. They had been exposed to considerable risk of the ships being lost and were about to take to the boats and proceed overland, and in preparation for this merely prepared to carry with them abstracts of the observations, leaving the original full records safely deposited in secure cases in the cabins of the ships, to be found by those who doubtless would be sent out to look for them. He had, there-

fore, no doubt that if the ships of Sir John Franklin were still in existence, in their cabins were to be found those scientific treasures.

Captain Maguire said he much wished he could convey to the section any vivid impression of the beauty and brilliancy of the auroral displays in those regions. It was never seen during the hours of daylight, or those hours which corresponded to mid-day, but towards evening its displays began, at first towards the north; it then extended in splendid arches spanning the entire sky, and seeming to end in beautiful coronæ towards the zenith; these were occasionally of the most brilliant and varied tints and colours. It spread gradually more south, and at length died away towards the morning hours in the south. Such were the beauty and interest of these displays, that men and officers constantly, with the thermometer at and below 40° below zero, stood out for hours witnessing the glorious scene. During these auroral displays, he could not say that he had ever witnessed those violent agitations of the needle that others had described, but the easterly disturbance of the variation seemed to be simultaneous with its northerly display, and the westerly with its influence when it had passed to the south. At some distance from the ships, say about five miles, the water shoaled, and the ice had been driven up into beautiful rocky pinnacles; beyond this, again, the water was always free of ice, and its temperature was frequently found to be 28° above zero, when that of the air above was even 40° below zero; the consequence was, that it had all the appearance of a boiling sea, so great was the quantity of vapour thrown up from it.

NOTICE OF METEOROLOGICAL OBSERVATIONS MADE AT SEA.

[*Communicated by* Admiral Fitzroy.]

Admiral Fitzroy drew the attention of the section to the meteorological papers lying on the table, which had been recently published by the Board of Trade. The report to which he referred would show what progress had been made, and therefore he would not occupy valuable time by entering into details. He would only observe generally, that a great number of valuable observations had already been made on board some hundred ships, with excellent instruments approved by the Kew Committee of the British Association, and that those observations were regularly tabulated in such a manner as to admit of their being combined in groups or used individually. The willing cooperation of officers at sea had already accumulated more observations than can be reduced and tabulated with corresponding quickness; therefore, more reduction of observations rather than more observers with a larger number of instruments, seems necessary; and this can only be accomplished by employing a larger staff. The Government had shown the utmost willingness to attend to the recommendations of competent authorities with respect to the establishment and support of the Meteorological Office at the Board of Trade; and only desired to apply the vote sanctioned by Parliament for meteorological observations at sea to the best possible advantage. The United States, Great Britain, and Holland, had already cooperated largely in this work, and France had lately established a similar department for collecting and discussing such observations.

ON THE DISTRIBUTION OF HEAT OVER THE SURFACE OF THE BRITISH ISLES. BY PROFESSOR HENNESSY.

Since the author had communicated to the section at the Cheltenham Meeting of the Association an account of his general views as to the laws of distribution of isothermal lines, further confirmation of these views had arisen. It had been already shown that the isothermals in Ireland are partly closed curves surrounding a space of minimum temperature, having its centre a little to the north-east of the centre of the island. With the aid of the observations collected and published by Mr. Glaisher, those contained in Professor Dove's reports, and a few additional isolated results, the isothermals for Great Britain have been laid down on the map exhibited to the section. No correction has been made for elevation above the sea level, as atmospherical phenomena do not depend upon the fictitious temperatures so deduced, but upon its actual amount. This non-reduction would partly account for the remarkable decrease in temperature in going from the coast towards the interior of the island, and by which the space of minimum temperature in Great Britain is made to occupy a position between the midland counties of England and the north of Scotland, where it expands to its greatest breadth. The influence of distance from the sea and of height above it are, doubtless, both combined in producing the remarkable forms of the isothermals of the British Isles, and it would, therefore, be desirable in future tables of the distribution of temperature to have the former element noted in connexion with each station as well as the latter.

Section of Chemical Science.

ON THE ATOMIC WEIGHT OF ALUMINIUM. BY PROFESSOR MALLETT.

Some experiments were described which the author had made upon metallic aluminium prepared in Paris and in Berlin. The composition of the commercial metal had been found to be

	Paris.	Berlin.
Aluminium	92·969	96·253
Iron	4·882	3·293
Silicon	2·149	454
Sodium	Trace	Trace
Titanium	Trace?	
	100	100

Dissolving the metal in dilute muriatic acid, precipitating with ammonia, weighing the precipitate, and calculating from the results, and from the above composition of the crude metal, the weight of pure alumina yielded by a given weight of pure aluminium was found, and hence the equivalent of the element. The number deduced from our experiment, out of four made, differed so scriously from that given by the other three, that the investigation must be looked upon as still quite incomplete. The apparent cause of the discrepancy was pointed out —namely, the retention by alumina of a small amount of water at even a very high temperature. The importance of a speedy revision of the atomic weight of aluminium was insisted upon, the method by which the number now admitted was obtained being noticed as ill suited to give an accurate result.

ON SOME ARSENIATES OF AMMONIA. BY MR. ALPHONSE GAGES.

After mentioning the arseniates of ammonia already described by Berzelius and Mitscherlich, and noticing the doubtful character of the description given in books about the processes for preparing the salts of ammonia and arsenic acid, and the doubtful character of their constitution, he then described his own experiments, in which he verified the constitution of the salts mentioned by Berzelius and Mitscherlich, showing, however, that the salt containing three equivalents of ammonia described by the former, contains seven equivalents of hydrated water. He describes three new double salts, formed by arseniate of ammonia, in which soda, potash, etc., act as the second bases. He also exhibited some beautifully crystallised compounds of arsenic acid, with morphia and quinine, which may probably be of interest as therapeutical agents.

ON THE TIME REQUIRED BY COMPOUNDS FOR DECOMPOSITION. BY DR. WOODS.

The heat absorbed in the decomposing part of the cell was shown in all the instances to be the same in equal times, so that the decomposition, and consequently the intensity of the current, is inversely proportional to the quantity of heat required for the decomposition of an equivalent of the substances used in each case. Other important results, and some predictions which Dr. Woods had already had an opportunity of verifying, were also brought forward in this paper.

ON A NEW METHOD OF FORMING AMMONIO-IODIDES OF METALS. BY THE REV. J. B. READE.

It is only within the last few years that the attention of chemists has been directed to the compounds of metals with iodine and ammonia. The 5th edition of Brande's *Chemistry*, published in 1841, is silent on the subject. At the Oxford meeting of the British Association, in 1847, Mr. Reade exhibited the ammonio-iodide and per-iodide of gold, and since that time other experiments on other metals have furnished him with results which may be of some interest.—*Solution of Iodine in Ammonia.* Perhaps the best mode of dissolving iodine in ammonia for the purpose in question, is to place about fifty or sixty grains of iodine in an evaporating dish, hold it over the spirit-lamp till thoroughly warm and the vapour arises, and then add a few drops of liquor ammoniæ, which will be immediately charged with a large excess of iodine in solution. This may be poured into a bottle, and more iodine and ammonia added, until the requisite supply is obtained. —*Ammonio-iodide of Gold.* Gold-leaf when placed in the iodine solution instantly turns black (purple if the solution be diluted), and immediately dissolves, like sugar in water. If left to evaporate spontaneously in some quantity, we obtain

black four-sided prisms of the ammonio-per-iodide, which readily dissolve in water; and if a very weak solution be exposed for some months to the direct action of the sun's rays, a slight precipitate appears, and a drop or two of the clear solution furnishes a most striking microscopic object both as to crystalline arrangement and richness of tint when placed in polarised light.—*Ammonio-iodide of Silver.* Gmelin says of the ammonio-iodide of silver, that 'unfused iodide of silver absorbs with evolution of heat 3·6 per cent. of ammonia, and forms a white compound, which on exposure to the air gives off ammonia and turns yellow again.' The phenomena are far more interesting when silver leaf is added to the ammonia solution of iodine. The metallic silver is dissolved, and when a few drops are placed on a slip of glass beautiful brushes of prismatic crystals shoot out in all directions, which may be mounted as a microscopic object in Canada balsam after the excess of iodine is spontaneously evaporated. Under polarised light the colours of the crystals are brilliant in the extreme.—*Ammonio-iodide of Mercury.* The phenomena in forming this compound are varied and interesting. Mercury is added to the iodine solution, and after the application of heat and the addition of a little water, a few drops on a slip of glass give bundles of permanent prismatic crystals, similar to those of silver, and acted on with the same energy by polarised light. If ammonia be added to these crystals, they are immediately covered with tufts of snowy whiteness, and by degrees they are converted into ruby-coloured hexagonal prisms, which are also permanent.—*Ammonio-iodide of Cobalt.* Brande observes that, 'no precipitate is produced in solutions of cobalt either by hydriodic acid, or iodide of potassium, or by iodic acid, or iodate of potassa.' Mr. Reade finds, however, that cobalt yields to the action of the ammonio-iodide solution after some hours digestion and a little heat and water. As might be expected, it exhibits very strongly the sympathetic properties of the chloride, for when placed on paper and gently heated it becomes a brilliant green, which of course vanishes as the paper cools.—*Ammonio-iodide of Titanium.* As titanium, which resists every direct method of attack in the laboratory, yields after a period of digestion in the iodine solution, it is probable that other of the scarcer metals, which are with difficulty reduced by the ordinary methods, might be exhibited in the form of ammonio-iodides, and thus throw additional light on their respective equivalents. The crystals of ammonio-iodide of titanium which Mr. Reade has obtained were from a pure specimen of the metal obtained by Mr. Waterhouse, of Halifax, from the slag of the neighbouring iron-furnaces at Low Moor.—*Ammonio-iodide of Aluminium.* In forming this compound he did not, as on other occasions, use the pure metal, but alumina only, precipitated in the usual way. After allowing the alumina to digest for some time in the iodine solution, the whole was boiled in a little water, which dissolved the new compound, and upon evaporation and the proper measure of heat to volatilise the excess of iodine and ammonia, a white semi-metallic substance remained, as in the case of silver. It is soluble in dilute hydrochloric acid, and yields a blue precipitate on the addition of yellow prussiate of potash. Whether any use can be made of this process towards obtaining the pure metal is of course a problem for practical men.

ON THE PRESENCE OF COPPER IN THE TISSUES OF PLANTS AND ANIMALS. BY DR. ODLING AND DR. DUPRÉ.

The authors had made more than one hundred examinations by a great variety of processes, and had recognised the presence of copper in nearly every instance. In several specimens of wheat grain and human viscera the copper had been estimated. From 100 grains of wheat-ash the authors had obtained 251 thousandths of a grain, and from a sheep's liver rather more than one-half a grain of oxide of copper. The process was to precipitate the copper electrolytically on a platinum wire, to dissolve in nitric acid, and to ignite the residue of the evaporated solution.

ON THE CONDITION OF THE THAMES WATER, AS AFFECTED BY LONDON SEWERAGE.

BY R. BARNES, M.D., AND W. ODLING, M.D.

The authors said it was now established that the pouring in of the contents of the drains did not affect the water as seriously as had been thought. The organic matter of the Thames was chiefly in a state of vitality, and therefore there was not so much putrefaction as was generally supposed; at high water there was the greatest, and at the ebb tide the least amount of organic matter.

[To be continued.]

Editor's Letter Box.

KNOTS IN THE UMBILICAL CORD.

Letter from S. Palmer, M.D.

Sir,—The attention of your readers having been recently directed to the subject of "knots on the umbilical cord", I have thought that a case which occurred to me last week might likewise prove of some interest.

The child, a fine healthy male, when born had the cord twice round its neck, once round the right arm, and twice passed around the left leg. A knot was found nine inches from the umbilical extremity. The total length of cord was thirty-nine inches.

The suggestion of Hunter—viz., that the umbilical cord at birth may perhaps form a coil round the margin of the os uteri within; and that the fœtus, in passing the orifice of the uterus, may at the same time pass through the loop, carrying the umbilical extremity of the cord along with it, so as to form the knot at the very moment when the body passes into the world—will not explain the occurrence in this case, as the vessels are flattened, and closely applied one over the other, giving most unmistakable evidence that it had been formed long prior to birth. These are truly Gordian knots. Who can unravel them? I am, etc., S. Palmer.

London Road, Newbury, September 9th, 1857.

TOPICAL TREATMENT OF NEURALGIA.

Letter from Alexander Wood, M.D.

Sir,—I observe in the last number of the British Medical Journal, an inquiry by Dr. Probart as to the method of treating neuralgia introduced by me, and recommended in the very interesting communication by Dr. Bonnar in the number for August.

I would have replied to the letter in detail, were it not that, the first edition of my pamphlet on the subject being exhausted, I am now engaged in preparing a second with many additional cases.

I am, etc., Alex. Wood.

2, St. Colme Street, Edinburgh, September 14th, 1857.

FECUNDITY OF RUSSIAN WOMEN.

Letter from S. W. J. Merriman, M.D.

Sir,—Is it a fact that the Russian women are very much more prolific than other women? The cases you have transferred to the pages of the Journal from the *Magazine of Natural History, etc., of Moscow*, go some way to prove this; but one case clearly occurred some years ago, and another, detailed at length, bears so strong a resemblance to one published in England above seventy years since, that I am induced to place the two in apposition, to beguile the minds of your readers, who may be deprived of some of their accustomed business by all the world being "gone out of town".

MODERN (?) CASE. (*Magazine of Nat. Hist. of Moscow.*)		FORMER CASE. (*Gentleman's Magazine*, Sept. 1783.)	
A peasant "Kirilow" married a second wife at 70; was, with his wife, presented to the Empress.		A peasant "Feodor Wassilief", aged 75, was to be presented to the Empress.	
First wife had 21 deliveries:		First wife had 27 deliveries:	
4 of four children	16	4 of four children	16
7 of three „	21	7 of three „	21
10 of two „	20	16 of two „	32
	57		69
Second wife had 7 deliveries:		Second wife had 8 deliveries:	
1 of three children	3	2 of three children	6
6 of two „	12	6 of two „	12
	15		18
Deliveries in all	28	Deliveries in all	35
Children born	72	Children born	87
		of which eighty-four are living, and only three dead.	

Are these two wonderful cases distinct, or only two editions of one unique case?

Whichever it be, the case appears to me to prove fecundity in the men rather than in the women of Russia generally; and this will perhaps strike also such of your readers as can turn to Appendix 20 of my father's *Synopsis of Difficult Parturition*, so long a text-book in all the Schools of Medicine. Here they will find not only the case of the Russian peasant, but an account of a Frenchman, whose wife seven times, and servant once, brought him three children at a birth; besides some other curiosities of plural births.

I am, etc.,
S. WM. J. MERRIMAN.

3, Charles Street, Westbourne Terrace, Sept. 8, 1857.

THE SCOTTISH LUNACY BOARD.

SIR,—I observe that two erroneous statements, originally published in an obscure and intemperate Edinburgh newspaper, regarding Dr. James Coxe, one of the paid Commissioners of the new Scottish Lunacy Board, have been copied as facts into professional journals, and made the theme of very unfair comment. It is stated that Dr. Coxe does not owe his appointment to merit, but to his having been "family physician to the Duke of Argyll", and to his wife being "the relative of a cabinet minister". I have known Dr. Coxe and his family intimately for twenty years, and I can positively assert that he never was family physician to the Duke of Argyll, and that his wife is not related to a cabinet minister. Had it been otherwise, there would have been no reason why a physician of Dr. Coxe's high acquirements, learning, and experience, should not have been appointed to the new board; but, as a lover of truth, I think it right to point out the groundlessness of the inventions of a discontented northern clique. Dr. Coxe, I observe by the newspapers, is at present abroad, making a tour of the continental asylums.

The insertion of this letter will oblige yours, etc.,

VERITAS.

London, September 16th, 1857.

Medical News.

BIRTHS, MARRIAGES, DEATHS, AND APPOINTMENTS.

In these lists, an asterisk is prefixed to the names of Members of the Association.

BIRTHS.

ASHLEY. On September 1st, at 8, Boyne Terrace, Kensington Park, the wife of W. H. Ashley, M.D., of a son.

GROWSE. On September 12th, at Brentwood, the wife of *Robert Growse, M.D., prematurely, of twins, who survived their birth only a few hours.

HARDEY. On September 9th, at 2, Earl Street, Blackfriars, the wife of Key Hardey, Esq., Surgeon, of a daughter.

HAVILAND. On September 6th, the wife of *Alfred Haviland, Esq., Surgeon, Bridgewater, of a daughter.

MAY. On September 8th, at 16, Mount Place, London Hospital, the wife of Emanuel May, Esq., Surgeon, of a son.

MILLER. On September 11th, at 1, Somers Place, Hyde Park, the wife of Robert Miller, M.D., of a son.

OTWAY. On September 15th, at 7, Canterbury Row, Newington, the wife of C. W. C. Otway, Esq., Surgeon, of a son.

ROSE. On September 15th, at Hampstead, the wife of Henry Cooper Rose, M.D., of a son, stillborn.

MARRIAGES.

CROSSE—TAYLOR. *CROSSE, Thomas William, Esq., Surgeon, Norwich, to Mary Jane, eldest daughter of Adam Taylor, jun., Esq., of Norwich, on September 10th.

HILL—DRURY. HILL, Alfred Octavius, Esq., to Elizabeth Alice, daughter of the late J. Drury, M.D., of St. Petersburg, at St. Petersburg, on September 3rd.

KELSON—CUMMING. KELSON, Henry, Esq., of Poplar, to Emily Jane, daughter of William S. Cumming, Esq., Surgeon, at Limehouse, on September 10th.

WILLIAMS—M'DOUGALL. WILLIAMS, J. T., Esq., Madras Medical Service, to Flora, daughter of Thomas M'Dougall, Esq., of Eskmills, Penicuick, at Edinburgh, on September 8th.

DEATHS.

BATEMAN, George, M.D., formerly of Great Yarmouth, at Leamington, aged 69, on September 13th.

LONSDALE, Edward Francis, Esq., Surgeon to the Royal Orthopædic Hospital, suddenly, from the rupture of a blood-vessel, aged 46, on September 11th.

NORTON. On September 16th, at Walpole Lodge, Strawberry Hill, Maria, youngest daughter of the late Matthew Norton, Esq., Surgeon, of Gloucester Place, Marylebone.

ROOKE. On July 15th, at Malabar Hill, Bombay, Agnes Isabel, wife of Dr. Rooke, Surgeon-General.

APPOINTMENTS.

*BROWNE, W. A. F., M.D., Superintendent of the Crichton Institution at Dumfries, appointed one of the Paid Commissioners of Lunacy in Scotland under the new Lunacy Act.

COXE, James, M.D., of Edinburgh, appointed one of the Paid Commissioners of Lunacy in Scotland.

*STEELE, Arthur B., Esq., appointed Honorary Surgeon-Accoucheur to the Liverpool Ladies' Charity, in the room of G. B. Denton, Esq., resigned.

PASS LISTS.

APOTHECARIES' HALL. Members admitted on Thursday, September 10th, 1857:—

FENNELL, Sydney, Cradly, Worcestershire
HYDE, William Edward, Ledbury, Herefordshire
SHARPIN, Edward, Bedford

HEALTH OF LONDON:—WEEK ENDING SEPTEMBER 12TH, 1857.

[*From the Registrar-General's Report.*]

THE present return indicates an improved condition of the public health. The deaths registered in London in the week that ended on Saturday (September 12th), were 1023; during seven previous weeks they rose in three instances above 1200, and the lowest weekly number was 1084. If the average rate of mortality, derived from deaths by all causes (except the cholera of two epidemic seasons), as they occurred in corresponding weeks of the ten years 1847-56, had prevailed last week, the number of deaths would have been greater by 128 than that which is actually returned.

Diarrhœa continues to decline; and last week the decrease was more decided than it has recently been. The deaths from this disease, which in the two previous weeks were 198 and 181, have fallen to 144. During the last fortnight, the mean weekly temperature was about 60·5°, being less by 5° and 6° than it had been in the latter half of August, and less by 8° than it had been in the great heat of July. Of the 144 deaths from diarrhœa, 115 occurred to children; and of nine deaths from cholera or "choleraic diarrhœa", all occurred to very young children, except one. Eight deaths are referred to dysentery, and these also, with one exception, occurred to young persons. The deaths from scarlatina rose to 44; and of these, 11 occurred in the west districts, and 9 in the central. Of 39 from typhus and common fever, none occurred in the central districts. Small-pox was fatal in only two cases. One person died of intemperance; one from want of food; one from grief; and one from a wound received in dissection; a lascar (in the *Dreadnought* ship) from scurvy. The deaths of five nonagenarians are included in the returns: viz., two women who died at the age of 90 years, two widows at the age of 94, and a spinster who died in Bow at the age of 97 years.

Last week the births of 813 boys and 762 girls, in all 1575 children, were registered in London. In the ten corresponding weeks of the years 1847-56, the average number was 1443.

At the Royal Observatory, Greenwich, the mean height of the barometer in the week was 29·542 in. The greatest barometric pressure was 29·76 in., on Monday. The mean temperature of the week was 60·5°, which is 2·9° above the average of the same week in 43 years (as determined by Mr. Glaisher). The thermometer was at its highest point in the shade on Sunday, when it was 75·7°; it fell to its lowest point on the day following, when it was 51·4°. The thermometric range of the week was therefore 24·3°. The mean daily range was 16°. The mean dew-point temperature was 56·4°; and the difference between this and the mean air temperature was 4·1°. The

wind had on every day, or on part of every day, a south-westerly point. Rain fell to the depth of 2·24 in., nearly all of which fell on Tuesday and Friday. On Friday, the amount was 1·16 in. Rain fell almost incessantly from ten o'clock on the evening of Thursday till three o'clock in the afternoon of Friday.

Salaries of the Poor-law Medical Officers at Kenmare, in Ireland. We regret to understand that the Commissioners have ratified the decision of the Kenmare guardians, and cut down the salary of two of the physicians—reducing that of Dr. McCarthy by £20, and that of Dr. Taylor by £10. They allow the salary of Dr. Maybury to remain as it was. We regard this act of the Commissioners with no possible respect. On the contrary, we consider their conduct rather shabby. That they decided wisely in not touching the salary of one of the three, it is unnecessary for us to state. But why cut down the other two? Why victimise Dr. McCarthy, by sweeping away with one stroke of the pen, no less than one-fifth of his income? Is this done as a means of marking the respect which the Commissioners entertain to those who dare to speak out like men? Perhaps it is intended as a graceful recognition of some allusions made by Dr. McCarthy in his speech to the respectable salaries of their high mightinesses themselves! We put it to those gentlemen, how should they like this docking process applied to their own incomes? Public reasons might be pleaded in favour of cutting *them* down in one-fifth of the large amount which they now receive—at a time, too, when the pauperism of the country has been miraculously diminished. Same case same rule, Mr. Chief Commissioner. You say the doctor has less to do, now that the number in the workhouse hospital is less than it was two years since: and that therefore the pay of a third-rate mechanic is quite adequate to reward the services of an expensively educated and accomplished gentleman. For argument sake, we grant this proposition, made by the Guardians, and sanctioned by the Commissioners. But if it be good for the doctor it is equally so for the commissioner. Your duties, gentlemen, must be diminished at least two-thirds of what they were before; for your own returns of this year prove that the numbers have come down more than three-fourths of those in the workhouses of Ireland some four years since. By all means, then, let the Irish members insist upon a proportionate cutting down of the monster salaries of these official despots. This may be done with a free conscience, because £500 a year off the salary of a commissioner would have no effect upon his position in life, and would in no way cripple his resources; whereas the one-fifth of the salary of a physician in a poor district, is a serious curtailment of his means of living in a condition, not to say of comparative comfort, but of common decency. Now, £20 a year enables the country physician to dress himself as respectably as may be required, and even to keep a shilling in his pocket for a poor fellow-creature; but this twenty pounds deducted from his salary, he must cling for another year to the rusty coat, and the seedy hat, and the patched boots—or, gentleman as he is, he must descend to the slavery and the degradation of debt. We promise the Commissioners that the policy which they sanction, and which they themselves cannot but feel to be shabby in the extreme, will recoil on their own heads, and that ere very long. But in the meantime the profession have their duty to perform; for it cannot be supposed that they will stand by, and tamely acquiesce in this persistent attack upon the dignity and independence of their body. If they remain passive spectators of this docking process, the result will be that some guardians will at length come to consider that a labourer's pay is all-sufficient remuneration for their services; and commissioners will be found to ratify that estimate of their usefulness. We cannot shut from our mind the belief, that if Dr. McCarthy had been silent, and not spoken out as he has done, he would be better off in respect to the recent affair than he now is. But it is fortunate that there are men who will speak out at every personal risk; and when such men speak in behalf of a public body, that public body has a right to stand by and identify itself with its organ and its advocate. In this case, Dr. McCarthy has been the advocate of the Dispensary Doctors of Ireland, if not of the profession at large; and we should not be surprised if those whose cause he so eloquently pleaded adopted some means of letting the public understand how keenly they appreciate his courage and his services. (*Cork Examiner, and Dublin Medical Press.*)

Testimonial to Dr. McCarthy. At a numerous meeting of the Committee of the County and City of Cork Medical Protective Association, held on September 5th, Philip N. Walsh, M.D., of Middleton, in the chair, the following resolutions, proposed by Dr. Richard Corbet, and seconded by Dr. Lloyd, were unanimously adopted:—That, as a body of medical men, associated to uphold the honour and interests of our common profession, we feel it a pleasurable duty to mark our high admiration of the noble and independent stand made by Dr. McCarthy before the Kenmare Board of Guardians, against the gross injustice, done not only to himself and confrere, by reducing their salaries, but also in behalf of the Poor-law Medical Officers of Ireland, to whom is meted out a wretched stipend for arduous duties. That the faithfully eloquent, argumentative, and impressive address, which so earnestly and graphically pictured as well the slavery as the miserable pay of our brethren occupied in the medical charities, demands more than a passing encomium from the profession at large, and that we feel bound, not merely to accord our thanks, but, if possible, to present such a substantial testimonial to Dr. McCarthy, which, we trust, will be worthy his acceptance. That such a testimonial will evidence to the "Powers that be," who ought to have thrown their shield over a hard-working and zealous public officer, more especially when now in declining years and health, that there exists in the medical profession a feeling which will ever lead its members to mark their sense of an act of injustice, paltry in the extreme, and equally unworthy those who originated, as those by whom it was sanctioned. That a subscription be at once entered on, and that the amount from each member of the profession be five shillings. That Charles Hewitt, Esq., M.D., Patrick's-hill, Cork, be requested to act as treasurer. (Signed) P. N. Walsh, *Chairman.* Charles Armstrong, *Hon. Sec.*

Ventilation by Steam-jet. The *Leeds Mercury* gives the following account of the application:—"The application is at present in operation in a pumping shaft, 120 yards in depth, the ventilation of which had been stopped by the water rising at the bottom of the pit during the time some alterations were being made in the pumps. The water having stopped the air-courses, the pit, to within a few yards of the top, became full of the gas known to miners as black or choke damp, which appears to have been discharged freely from some old workings, and thus it was rendered an impossibility for the workmen to descend until the removal of the gas had been effected, and a constant current of pure air produced in the pit. Mr. Pierce has succeeded in maintaining so perfect a ventilation of the above-mentioned pit, simply by allowing a small jet of steam to issue into the atmosphere at a few feet from the top of the pipes through which the water is forced up when the pumps are at work, and the pit can be worked with perfect safety. The workmen were enabled to descend thirty minutes after the steam had been turned into the pipes. The principle is exceedingly simple. The jet of steam issuing from the top of the pipes produces in them a partial vacuum, which draws the foul air up these pipes, and thence out of the pit, with very great velocity. The cost of applying the steam jet in the above manner is very trifling; and this method of ventilation will, doubtless, be found a very safe and useful one in many instances, particularly in sinking deep shafts. In addition to other advantages, wood or any other kind of pipes may be used. It requires little or no attention, no machinery to get out of repair, produces a powerful current of air, and can be regulated at pleasure. As the steam is discharged into the atmosphere above the top of the pit, it does not interfere with the men working in the shaft." (*Dublin Medical Press.*)

Forged Diplomas. William Stuart Farquharson, who was recently detected as a pretended priest, and the author of a forgery on the Bucks and Oxon Bank, at Banbury, has just been sentenced, at the Oxford assizes, to twelve years penal servitude, having pleaded guilty to the forgery. The prisoner had run a long and successful career as a forger, principally of foreign medical degrees, for each of which he obtained, with great facility and rapidity, the sum of £40; this sum included an Inaugural Dissertation on any subject, which the intended recipient was supposed to defend before the heads of the university. The prisoner Farquharson was formerly in the 2nd Somerset Militia, but had to resign in consequence of the colonel discovering some of his disreputable antecedents; subsequently, however, he contrived to get into the Lincoln and the Elthorne regiments, obtaining his outfits by forged acceptances. He was the author of *The Pleasures of Home*, a goodly octavo; and he may, in fact, be looked upon as a very clever knave. (*Dublin Medical Press.*)

Preparation of Ink. Dr. Bley recommends the following method of preparing ink:—A decoction is made with a pound and a quarter of nut-galls, and as much hot water as will give five pounds of liquid after straining. Then four ounces of indigo powder is mixed with half a pound of sulphuric acid. the mixture left for twenty-four hours, then dissolved in five pounds of water and eight ounces of powdered chalk, and eight ounces of iron filings added. A part of the acid is neutralised by the chalk, and a part by the iron filings, forming sulphate of iron. The solution thus obtained, mixed with the decoction of nut-galls, gives ten pounds of ink, which does not deposit sediment or turn mouldy, and flows readily from the pen. (*Dublin Medical Press.*)

Central Africa. An official despatch has been received at the Foreign-office from Her Majesty's Consul at Tripoli, throwing some doubt on the reported death of Dr. Vogel. The courier who had been despatched in April last for the frontier of Wadai, to obtain, if possible, some tidings of the fate of this scientific traveller, having returned to Murzúk, brings with him also a letter from the Sheikh of Borgu. From the report of some people composing a small caravan that had reached Borgu from Wadai, it appears that Dr. Vogel, after having successively visited several places, had reached Andra, whence he was summoned to Wara, the capital of Wadai, by the Sultan, by whom he had been some time detained, but was supposed to be preparing for his departure to Darfur. Upon the receipt of this report the Sultan of Borgu, who had zealously interested himself in the matter, at once sent off two couriers to Wadai, both of whom had returned with reports corroborating the story of the caravan people. Respecting the death of the gallant Maguire, no doubt appears, unfortunately, to be entertained: and the favourable report of the existence of poor Vogel is still so much a matter of uncertainty that, should no positive tidings of his fate be received by the large caravan, which was daily expected at Murzúk, other couriers will be immediately hastened off to obtain, if possible, written evidence of his fate. To the friends of Dr. Vogel it will be a great consolation to know that Lord Clarendon is thus making every effort to ascertain his fate, and, should he be held in captivity, to devise means for his redemption.

Decay of Gutta Percha. From the reports of Mr. E. Highton on the state of the underground wires of the British Electric Telegraph Company, published in the *Journal of the Society of Arts*, it appears that wherever the wires had passed near the roots of oak trees they had failed, whilst in other parts, only a few yards distant, they were perfectly sound. On examining the soil, a whitish looking plant was detected, resembling the spawn of the mushroom, or some other fungus; the plant had spread over and around the wooden trough, covering it with a whiteness resembling whitewash, and wherever it had touched the gutta percha wires the gutta percha was rotten; a yellowish-green fungus, of which this plant was supposed to be spawn, was found growing luxuriantly under the oak, but not under any other tree. The plant possesses a powerful odour at once detected on breaking the soil. The presence of the plant and the decay of the wires were found coincident; the absence of the plant and a most perfect state of the wires coincident also. It was found that the wires in one locality passing under two oak trees were not injured; in this case no fruit of the fungus could be found in the soil, although plentiful under other oak trees in the neighbourhood. With reference to the decay of gutta percha in iron tubes, it was found at Winslow that the wires through the entire lengths of the iron pipings were in a state of decay, whilst the wires in the wooden boxing were found perfect. The decay in this case appears to be produced by a cause entirely different from that under the oak trees.

An Extraordinary Affair. A reward has been offered under the following circumstances:—On Tuesday, the 1st inst., a small box, covered with brown paper, and directed to Mr. Bennett, surgeon, the Square, Wilton, was delivered to Mrs. Ware, the Wilton carrier, near the Shoulder of Mutton Inn, Salisbury, by a boy about 14 years of age, dressed in a short jacket, trousers, and cap. If the boy who delivered the box to Mrs. Ware will come forward and prove the same, and give information as to the party who entrusted it to his care, he is offered a reward of £5, together with all reasonable travelling expenses; and a further sum of £10 is offered to him or any other person who shall lead to the conviction of the offender—the box having contained a machine so constructed as to explode on the raising of the lid, and intended to destroy Mr. Bennett's life. (*Hampshire Telegraph.*)

Extraordinary Inquest. The following almost incredible statement appears in the last number of the *Drogheda Conservative*:—"On the 27th ult., the body of a female infant was found, by the police at Kells, concealed in the soil of a privy, at the back of the house of Mr. Richard Close, medical practitioner, accoucheur, proprietor of a medical establishment, etc. They reported the circumstance at once to a local magistrate. Witnesses were instantly summoned, and a most respectable medical man, Dr. Pentland, all of whom agreed that Rose Meredyth, a servant in the establishment, was the mother of said infant, and that it was dead born, and had not come to maturity. After a short consultation between the magistrate and the police, having summed up, they came to the following conclusion:—'We find that Rose Meredyth, mother of the infant, is not only not guilty, but perfectly free from any blame whatever; and we further add, that she was justified in burying her offspring. dead born, even in a privy, dung heap, or sink, or where it suited her convenience.' Mr. H. Martin, coroner of the county, having got private information, lost no time in ascertaining the facts, when he was called on to interfere, and at once issued his precept and warrant to disinter the body, preparatory to holding a legal inquisition. He summoned fifteen respectable jurors on Thursday, the 3rd instant, fourteen of whom attended, and were sworn; and after a most minute and particular inquiry, without the slightest hesitation, the jury returned a verdict, that the body of the said infant was found concealed in a privy, in the town of Kells, and that Rose Meredyth is the mother thereof; and, finally, that she concealed the birth of the same. In the interim between the former and latter inquest, Rose Meredyth was allowed to escape, when the coroner had no alternative but to issue his warrant for her apprehension."

Locusts. Two or three specimens have been procured in Dublin and in the north of Ireland. Mr. Sweeny of Portobello, while passing over Carlisle Bridge, September 13th, was attracted by a crowd pursuing a locust of much larger dimensions than one previously found in the College Park. Mr. Sweeny captured it after much exertion, and presented it to Trinity College Museum.

The Ophthalmic Congress. First-Class Staff Surgeon Frederick Roberts has been selected by the Director-General of the Army Medical Department, and the Minister for War, to represent the medical officers of the British army at the congress of the Ophthalmic Society about to meet at Brussels.

TO CORRESPONDENTS.

POSTAGE OF MANUSCRIPT AND PRINTED MATTER.

Any amount of manuscript or printed matter, singly or together, provided it contains nothing in the form of a letter, is transmitted through the post, in packets *open at the ends*, at the following rates: not exceeding 4 ounces, one penny; above 4 and not exceeding 8 ounces, twopence; above 8 ounces and not exceeding 1 pound, fourpence; for every additional half-pound or under, twopence.

To Contributors. The Editor would feel glad if Members of the Association and others, would cooperate with him in establishing as a rule, that in future no paper for publication shall exceed two pages of the Journal in length. If the writers of long communications knew as well as the Editor does, that lengthy papers *always* deter the reader from commencing them, this great evil would never arise. Brevity is the soul of medical writing—still more than of wit.

Anonymous Correspondents should always enclose their names to the Editor; not for publication, but in token of good faith. No attention can be paid to communications not thus authenticated.

Members should remember that corrections for the current week's Journal should not arrive later than Wednesday.

NOTICE.—Dr. Wynter will feel obliged if the Associates will address all Post Office Orders in payment of Subscriptions, to the Publisher, Mr. Thomas John Honeyman, 37, Great Queen Street, Lincoln's Inn Fields, London, W. C., "Bloomsbury Branch"; and he would also feel obliged by their sending all communications respecting the non-receipt of the Journal, to the same address; as both these matters are out of the province of the Editor.

Communications have been received from:—Dr. Cookworthy; Dr. T. Herbert Barker; Mr. G. W. Hastings; Mr. James Craig; Dr. S. Palmer; Mr. J. A. Locking; Mr. J. V. Solomon; Dr. Alexander Wood; Veritas; Mr. T. Holmes; Mr. Frederick Pritchard; Dr. J. L. W. Thudichum; Mr. Benjamin Dulley; and Mr. A. B. Steele.

BOOKS RECEIVED.

[* *An Asterisk is prefixed to the names of Members of the Association.*]

1. Phrenology made Practical and Popularly explained. By Frederick Bridges. London: Sampson Low, Son, & Co. 1857. pp. 185.

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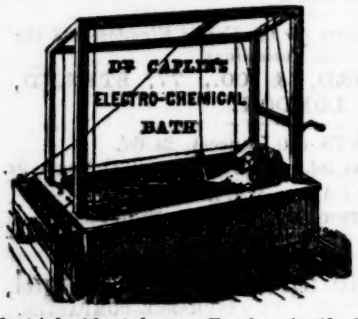

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Anatomy, Physiology, and Pathology, by Mr. Ikin, Mr. Wm. Nicholson Price, and Mr. C. G. Wheelhouse.
Descriptive Anatomy, by Mr. Wm. Nicholson Price, Mr. C. G. Wheelhouse, and Mr. T. P. Teale, Jun.
Principles and Practice of Surgery, by Mr. Nunneley and Mr. S. Hey.
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SUMMER SESSION, 1858, commencing MAY 1st.

Materia Medica and Therapeutics, by Mr. Bishop.
Midwifery and Diseases of Women and Children, by Mr. Smith and Mr. Braithwaite.
Forensic Medicine, by Dr. Pyemont Smith.
Botany, by Mr. Wm. Hall.
Practical Chemistry, by Mr. Scattergood.
Operative Surgery

Application for Tickets may be made to the Treasurer, Mr. SAMUEL HEY, Albion Place.

N.B. Attendance at the above Lectures will confer the same qualification for Examination as is obtained in the Medical Schools of London.

Clinical Lectures will be given at the General Infirmary twice a week; on Medical Cases by Dr. Chadwick and Dr. Heaton; and on Surgical Cases by Mr. Smith, Mr. T. P. Teale, and Mr. Samuel Hey. On Ophthalmic and Aural Practice, at the Eye and Ear Infirmary, by Mr Nunneley,

Medical Libraries are connected both with the School and the Infirmary.

Liverpool Northern Hospital.—The

WINTER SESSION will commence on Thursday, the 1st of October next.

CLINICAL LECTURES ON MEDICINE AND SURGERY will be delivered twice a week by the Physicians and Surgeons.

Physicians—Dr. DUNDAS and Dr. INMAN.
Surgeons—Mr. ELLIS JONES, Mr. D. CHALMERS, and Mr. MILLETT-DAVIS.
Junior Surgeon—Mr. JAMES HAKES.

Certificates of Attendance on the Hospital Practice and Clinical Lectures qualify pupils for examination in London, Dublin, Edinburgh, and Glasgow.

FEES FOR ADMISSION.

Perpetual, 30 Guineas. One year, 12 Guineas. Six Months, 9 Guineas.

For further particulars apply to Mr. W. B. WALL, House Surgeon.

Liverpool Northern Hospital, September 15, 1857.

Sulphurous Mineral Spring, Heath

COTTAGE, LEIGHTON BUZZARD, BEDS.—The high testimony and analysis of the late talented Dr. Andrew Ure, F.R.S., proving its similarity to Harrogate, with testimonials of its cures in Gout, Rheumatism, Skin Diseases, etc. Post free for a stamp, or three stamps with Remarks on the "Vapour, Shower, and Warm Baths," from the above spring, conducted by a physician, with every requisite for ensuring success in obstinate cases.—Address, R. FOUNTAINE, as above, or "M.D.," Aspley, Woburn, Beds.

Liverpool Royal Infirmary School

OF MEDICINE.—The Session of 1857-8 will commence on Thursday, 1st OCTOBER, when an Introductory Lecture will be given, at Two o'clock, by A. T. H. WATERS, Esq.

WINTER SESSION.

Principles and Practice of Surgery—MR. LONG, F.R.C.S.E., and Surgeon to the Royal Infirmary. £5 : 5 : 0.
Principles and Practice of Physic—THOMAS INMAN, M.D., Physician to the Northern Hospital. £5 : 5 : 0.
Anatomy, Physiology, and Pathology. Descriptive and Surgical Anatomy—MR. F. D. FLETCHER, and MR. A. T. H. WATERS, Surgeons to the Dispensaries. £8 : 8 : 0.
Chemistry and Pharmacy—J. B. EDWARDS, Ph.D. £5 : 5 : 0.

SUMMER SESSION.

Midwifery and Diseases of Women—MR. BATTY, Consulting Surgeon to the Ladies' Charity. Diseases of Children—MR. GRIMSDALE, Surgeon to the Lying-in Hospital. £4 : 4 : 0.
Materia Medica and Therapeutics—J. BIRKBECK NEVINS, M.D.Lond. £4 : 4 : 0.
Medical Jurisprudence—J. CAMERON, M.D., Physician to the Southern Hospital. Toxicology—DR. EDWARDS. £3 : 3 : 0.
Botany—MR. T. C. ARCHER. £3 : 3 : 0.
Ophthalmic Medicine and Surgery—R. HIBBERT TAYLOR, M.D., Surgeon to the Eye and Ear Infirmary. £1 : 1 : 0.
Practical Chemistry—DR. EDWARDS. £3 : 3 : 0.
The Dissecting Room is open Daily from 8 A.M. to 6 P.M. The Students are superintended in their Dissections by the Anatomical Lecturers.

ANNUAL EXHIBITIONS.

ROYAL INFIRMARY MEDICAL SCHOLARSHIP,—value £42,—consisting of a Gold Medal, value £10 10s., and six months free Board and Residence, with Dressership and Clerkship in the Royal Infirmary. In case the Scholarship is gained by a Resident Pupil, six months payment (£31 10s.) will be returned to him.

FOUR EXHIBITIONS,—value £31 10s. each,—consisting of free Board and Residence in the Royal Infirmary for six months, with Dressership on award of the Medical Board.

MEDALS AND OTHER PRIZES are awarded annually in each subject at the close of the Session.

Fees for all the Lectures required by the Hall and College, £45, payable in advance. Further particulars may be obtained from the Registrar, DR. NEVINS, 25, Oxford Street, Liverpool.

September 1st, 1857.

Sydenham College Medical School,

ST. PAUL'S SQUARE, BIRMINGHAM, (near the General Hospital).—The SESSION 1857-8 will COMMENCE on Thursday, the 1st of October next, with an INTRODUCTORY ADDRESS, by JOHN BASSETT, Esq., at Three o'clock in the afternoon.

Anatomy and Physiology—JOHN WHITE KEYWORTH, M.D.
Pathology—JAMES RUSSELL, M.D., formerly Senior Physician to the Birmingham General Dispensary.
Practical Anatomy and Demonstration—Messrs. GEORGE ELKINGTON, FROWD JONES, and D. JOHNSON.
Principles and Practice of Medicine—BELL FLETCHER, M.D., F.R.C.P.L., Physician to the General Hospital.
Principles and Practice of Surgery—ALFRED BAKER, F.R.C.S., Surgeon to the General Hospital.
Chemistry—ALFRED HILL, M.D., and F. WRIGHTSON, Ph.D.

SUMMER SESSION.

Midwifery and the Diseases of Women and Children — FRANCIS ELKINGTON, M.D., Consulting-Accoucheur to the Lying-in Hospital; and V. W. BLAKE, F.R.C.S., Medical Officer to the Lying-in Hospital.
Therapeutics—J. RUSSELL, M.D.
Materia Medica and Pharmacy—J. BASSETT, M.R.C.S.E.
Practical Chemistry and Toxicology—ALFRED HILL, M.D.
Botany—FREDERICK WESTCOTT, Assoc. L. S.
Forensic Medicine—W. C. ORFORD, Medical Officer to the Lying-in Hospital.

This College was established for the purpose of affording a complete Medical Education. It is presided over by a Council, composed of more than fifty of the most eminent Medical Practitioners of the Midland Counties. It is situated in the immediate vicinity of the Birmingham General Hospital, and the hours of Lecture are so arranged as not to interfere with attendance upon Hospital Practice. Attendance upon the Lectures will qualify for examination at all the Royal Colleges, the Army, Navy, and India Boards. Clinical Courses will be given by those Lecturers who are attached to public institutions in the town. During the past year extensive additions have been made to the Chemical Apparatus, and the Laboratory is fitted up with every convenience, so as to enable students to attain a practical knowledge of Chemistry. Care will be taken to instruct the students in Practical Midwifery, and, under suitable regulations, they will be allowed to avail themselves of the Museum of the Lying-in Hospital. Prizes will be awarded in each class, and one will be given by the Council for general proficiency.

Further particulars may be obtained on application to the Principal, DR. BELL FLETCHER, Waterloo Street; to the Treasurer, DR. RUSSELL, Newhall Street, who is authorized to enter Students; or to the Secretaries, MR. F. JONES, 42, Newhall Street, and DR. HILL, Whittall Street, Birmingham.

Queen's College, Birmingham.—

The SESSION 1857-58 will commence on FRIDAY, the 2nd of OCTOBER, when the Introductory Address will be delivered by the Principal, J. K. BOOTH, ESQ., M.D., at Two o'Clock.

The Lectures upon the various Branches of Medical Science are as follows:

THE WINTER SESSION.

SURGICAL ANATOMY.—Professor Sands Cox, F.R.S., Fellow of the Royal College of Surgeons of England; Senior Surgeon to the Queen's Hospital.

DESCRIPTIVE ANATOMY.—Professor Bolton, Fellow of the Royal College of Surgeons of England; Surgeon to the General Hospital.

GENERAL ANATOMY & PHYSIOLOGY.—Professor Heslop, M.D., Physician to the Queen's Hospital.

PRACTICAL ANATOMY WITH SUPERINTENDENCE OF DISSECTIONS.—Mr. Oliver Pemberton, M.R.C.S., Surgeon to the General Hospital, and Mr. T. F. Jordan, M.R.C.S.

CHEMISTRY.—Professor George Shaw, Fellow of the Geological Society.

PRINCIPLES AND PRACTICE OF MEDICINE.—Professor James Johnstone, M.D. (Cantab.), Fellow of the Royal College of Physicians of London; Senior Physician to the General Hospital.

PRINCIPLES AND PRACTICE OF SURGERY.—Professor Sands Cox, F.R.S., Senior Surgeon of the Queen's Hospital.

COMPARATIVE ANATOMY AND ZOOLOGY.—Professor R. C. R. Jordan, M.D., M.R.C.S.

THE SUMMER SESSION.

MATERIA MEDICA AND THERAPEUTICS.—Professor Alexander Fleming, M.D. (Edin.), Physician to the Queen's Hospital. Professor Knowles, F.L.S., Fellow of the Royal College of Surgeons of England; Surgeon to the Queen's Hospital.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.—Professor Samuel Berry, Fellow of the Royal College of Surgeons; Surgeon to the Magdalen Asylum.

FORENSIC MEDICINE.—Professor John Birt Davies, M.D. (Edin.), Licentiate of the Royal College of Physicians, London. (Extra urbem). Senior Physician to the Queen's Hospital.

BOTANY AND VEGETABLE PHYSIOLOGY.—Professor Knowles, F.L.S. The Students have, under certain regulations, access to the Botanical Gardens.

PRACTICAL CHEMISTRY.—Professor Shaw, F.G.S.

HISTOLOGY, SUPPLEMENTARY to the COURSE of PHYSIOLOGY.—Professor Heslop, M.D., Physician to the Queen's Hospital.

A MEDICAL TUTOR resides in College, and it is his especial province to prepare the Junior Students, non-resident as well as resident, for the Matriculation Examination of the University of London; to devote daily a certain number of hours to the Senior Students, non-resident as well as resident, in the dissecting room, and to examine them from time to time upon the subjects of the various Lectures.

CLINICAL LECTURES.—Clinical Lectures will be delivered weekly by the Professors attached to the Hospitals.

THE WARNEFORD SCHOLARSHIPS.—Four Scholarships have been founded by the Rev. Dr. Warneford, of £10 each, to be held for two years; to be conferred upon the Students who have resided in the College at least twelve months, who have been distinguished for their diligence and good conduct, who have been regular in their attendance on divine service, and whose attendance at the Theological Lectures has been regular.

THE WARNEFORD GOLD MEDALS.—The Interest of £1000 is applied for the institution of two Prizes, either in equal or unequal amounts. The Essays written for these Prizes are to be of a religious as well as scientific nature. Subject, "The Anatomy and Physiology of Respiration."

THE WEBSTER PRIZE.—Five Guineas offered by the late Joseph Webster, Esq., for the Student who may pass the best Examination in the French Language, continued by Baron D. Webster, Esq. Candidates will be required to translate some portion of an English author into French, as well as French into English. Three Candidates must compete for this Prize, or it will not be given.

THE PERCY PRIZE.—Books of the value of Five Guineas are offered by John Percy, M.D., to the Student who may pass the best Examination in three German Works. There must be not less than two competitors.

SURGICAL CLINICAL PRIZE.—Professor Sands Cox offers a Prize of Five Guineas (Books) for the best reported Surgical Cases under his care at the Queen's Hospital.

THE RATCLIFF PRIZE.—Ten Guineas (Books) are offered by Charles Ratcliff, Esq., for the best Essay "On the Use of Anæsthetics."

THE CLAY PRIZE.—Five Guineas (Books) are offered by John Clay, Esq., a former Student, for the best Essay "On the various Positions of the Fœtus, and the Causes which determine them."

MUSEUMS.—Connected with the College are Museums of Human, Comparative, and Pathological Anatomy, and Natural History, in all its branches, containing upwards of three thousand preparations, to which the Students will be admitted, under certain regulations, without any additional fee.

The Library contains upwards of Two Thousand Volumes.

There are two Laboratories in the College, fitted up with every convenience for the attainment of Practical Chemistry, and for the prosecution of Scientific researches.

College Examinations, as at the Universities, will be held at the end of each Term, in the respective Classes, at which every Student will be required to present himself.

The College is situated mid-way between the Queen's Hospital, in Bath Row, and the Birmingham General Hospital, in Summer Lane.

For information in the respective Departments, application may be made to Mr. Sands Cox, *Dean of the Faculty*, 24, *Temple Row; or to* Mr. Oliver Pemberton, *Honorary Secretary to the Professors*, 11, *Temple Row.*

Further information in reference to the Medical Departments, and respecting the Departments of Art, Engineering, and Theology, may be obtained on application to the Warden.

Surgeons' Hall, Edinburgh.—

WINTER SESSION, 1857-8.

The following COURSES of LECTURES on MEDICAL SCIENCE, and also those delivered in the University, qualify for Examination for the Diploma of the Royal College of Surgeons. All the Courses are for Six Months, if not otherwise specified.

CLASSES OPEN ON WEDNESDAY, NOVEMBER 4.

Materia Medica and Dietetics	9 A.M.	Dr. Douglas Maclagan.
+*Surgery*	10 A.M.	Mr. Spence.
Surgery (4, High School Yards)	10 A.M.	Mr. Lister.
Surgery (8, Infirmary Street)	10 A.M.	Dr. P. H. Watson.
Chemistry	10 A.M.	Dr. Stevenson Macadam
Analytical Chemistry	9 A.M. till 4 P.M.	Dr. Stevenson Macadam.
Practical Chemistry (Three Months' Course)	9 A.M. till 4 P.M.	Dr. Stevenson Macadam.
Physiology	11 A.M.	Dr. Sanders.
Medical Jurisprudence	4 P.M.	Dr. Littlejohn.
Clinical Medicine (Royal Infirmary)	1 P.M.	Drs. Keiller, W. T. Gairdner, and Warburton Begbie.
+*Clinical Surgery* (Royal Infirmary)	12 noon	Mr. Spence.
Anatomy	2 P.M.	Dr. John Struthers.
Anatomical Demonstrations	4 P.M.	Dr. John Struthers.
Practical Anatomy	9 A.M. till 4 P.M.	Dr. John Struthers.
General Pathology	9 A.M.	Dr Rutherford Haldane
Pathological Anatomy (Saturdays)	11 A.M.	Dr. Rutherford Haldane
Practice of Physic	3 P.M.	Dr. W. T. Gairdner.
Royal Infirmary	12 till 2 P.M.	
Dispensary Visit		Royal Public Dispensary. New Town Dispensary.
Practical Midwifery		Royal Maternity Hospital. Royal Public Dispensary. New Town Dispensary.
Practical Pharmacy		Royal Public Dispensary. New Town Dispensary.
Dental Surgery		Royal Public Dispensary.

By order of the Royal College, JOHN SCOTT, Secretary.

The INTRODUCTORY ADDRESS will be delivered by Dr. Rutherford Haldane.

Fees:—For the First of each of the above Courses, £3 : 5; for the Second £2 : 4; Perpetual, £5 : 5. To those who have already attended a First Course in Edinburgh, the Perpetual Fee for that Class is £2 : 4. The Fees for the following Courses are—Natural Philosophy, £2 : 2; Practical Chemistry and Practical Anatomy, £3 : 3; Anatomical Demonstrations, £2 : 2; Practical Anatomy, with Demonstrations, £4 : 4; Analytical Chemistry, £3 a month, or £10 for the Winter Session. *Royal Infirmary*—Perpetual Ticket, £12 : 17; Annual, £5 : 7 : 6; Half-Yearly, £3 : 5 : 6; Quarterly, £1 : 13; Practical Midwifery, Six Months, £1 : 3; Dispensary Practice, Six Months, £3 : 3; Practical Pharmacy, Six Months, £5 : 3; Dental Surgery, Six Months, £2 : 2.

During the SUMMER SESSION, 1858, the following Three Months' Courses will be delivered:—

Midwifery	Dr. Keiller.
Midwifery (4, High School Yards)	Dr. J. Matthews Duncan.
Medical Jurisprudence	Dr. Littlejohn.
Clinical Surgery	Mr. Spence.
Clinical Medicine	Drs. Keiller, W. T. Gairdner, and Warburton Begbie.
Practical and Analytical Chemistry	Dr. Stevenson Macadam.
Practical Anatomy, with Demonstrations	Dr. John Struthers.
Comparative Anatomy	Dr. John Struthers.
Operative Surgery	Dr. John Struthers.
Pathological Anatomy	Dr. Rutherford Haldane
Natural Philosophy	W. Lees, A.M.
History of Medicine	Dr. Warburton Begbie.
Diseases of the Eye	Mr. Walker.
Dental Surgery	Dr. John Smith.
Climatology	Dr. Pinkerton.

The above Courses of Lectures qualify for Examination at the Royal Colleges of Surgeons of Edinburgh, England, and Ireland; the Apothecaries' Hall, London; the Faculty of Physicians and Surgeons of Glasgow, the Boards of the Army, Navy, and East India Company; and also, so far as required, for the Universities of London, Oxford, Cambridge, St. Andrews, Aberdeen, and the Queen's University, Ireland.

In accordance with the recent statutes of the UNIVERSITY OF EDINBURGH, one-third of the entire Medical Classes required for Graduation may be attended under any of the above Teachers; and one of the four years of Study required for the University Degree may be constituted by attendance, in one year, on two of the above Six Months' Courses, or on one of these and two Three Months' Courses. The regulations require that, in this case, the Fee for any of the above Classes shall be the same as that for the corresponding Class in the University.

+ According to the present Statutes of the University of Edinburgh, these Courses, when taught, as at present, by the same Lecturer, do not qualify for graduation there; but qualify for every other Public Board.

Those who hold a Scotch or Irish Diploma, or Degree in Surgery, are admitted to the same rights under the Poor Law Amendment Act as Members of the Royal College of Surgeons of London.

Students are requested to bear in mind that the *Registration* at Surgeons' Hall closes on 30th November.

J. MATTHEWS DUNCAN, *Secretary to the Medical School.*

The Queen's Hospital, Birmingham.

—A Vacancy has occurred in the Office of RESIDENT MEDICAL OFFICER.

He is provided with Board, Lodging, and Washing, and receives a Salary of £100 per Annum.

The Candidates, who must be Members of the Royal College of Surgeons, and Licentiates of the Apothecaries' Company, are requested to send in their Testimonials of Qualification, to the Secretary, on Wednesday, the 30th September, 1857.

JOHN YATES, Secretary.

St. Andrews, Apothecaries' Hall, etc.

—DR. STEGGALL continues to give his Lectures and private tuition during the summer months, preparatory to all Medical and Surgical Examinations. Apply before One, or after Three o'Clock, at his residence, 2, Southampton Street, Bloomsbury Square.

St. Mary's Hospital Medical School.

—The WINTER SESSION will commence on Thursday, October 1, at half-past 2 o'clock, with an Introductory Address by Mr. Lane.

It is a distinctive characteristic of St. Mary's Hospital that all its Medical Appointments are conferred upon the Pupils free of every expense; Five Appointments (the advantages arising from which far exceed the money value of as many SCHOLARSHIPS of Fifty Pounds each), are thus annually awarded amongst the Students. There are three Resident Medical Officers who board (free of all expense) in the Hospital, and are appointed for twelve months; and one Obstetric Officer, who is appointed for Six months, and receives Fifty Pounds; three Non-Resident Medical Officers; a Medical and a Surgical Registrar; all of whom are appointed by the Weekly Board of Governors on the recommendation of the Medical Committee. Clinical Clerks and Dressers are selected from the best qualified Students. All the above offices are awarded after competition, among the qualified Perpetual Pupils of the Hospital.

Physicians—Drs. Alderson, Chambers, Sibson, H. Jones, Sieveking, and Markham. Surgeons—Messrs. Coulson, Lane, Ure, Spencer Smith, Walton, and J. Lane. Physician-Accoucheur — Dr. Tyler Smith. Surgeon-Accoucheur—Mr. I. B. Brown. Ophthalmic Surgeon—Mr. White Cooper. Aural Surgeon—Mr. Toynbee.

Further information may be obtained on application to the Dean of the School, who will also furnish the names of Gentlemen in practice in the vicinity of the Hospital willing to receive pupils to reside with them.

SPENCER SMITH, Dean of the School.

St. Mary's Hospital, August, 1857.

The Middlesex Hospital.—The

WINTER SESSION will commence on Thursday, October 1, with an Introductory Address, by Dr. HENRY THOMPSON, Fellow of St. John's College, Cambridge, at 8 o'clock p.m.

The Hospital contains upwards of 300 beds, of which 120 are for Medical, and 185 for Surgical cases. The Cancer Establishment receives 33 patients. Wards are set apart for the reception of cases of Uterine Disease and of Syphilis. Upwards of 16,000 out-patients and nearly 900 Midwifery cases were attended during the past year. Ophthalmic and Dental cases are separately attended to.

Medicine—Dr. Stewart and Dr. Goodfellow.
Surgery—Mr. Shaw.
General Anatomy and Physiology—Mr. De Morgan.
Anatomy—Mr. Moore.
Practical Anatomy—Mr. Nunn and Mr. Flower.
Chemistry—Mr. Taylor and Mr. Heisch.
Morbid Anatomy—Mr. Nunn and Mr. Sibley.
Histology—Dr. Vander Byl.

SUMMER SESSION.

Materia Medica—Dr. Henry Thompson.
Medical Jurisprudence—Dr. Goodfellow and Mr. Henry.
Midwifery—Dr. Frere.
Botany—Mr. Bentley.
Practical Chemistry—Mr. Taylor and Mr. Heisch.
Histology—Dr. Vander Byl.
Comparative Anatomy—Mr. Flower.

Clinical Lectures are delivered regularly by the Physicians and Surgeons
Clinical Clerks and Dressers are selected from among the best Students
The House Surgeons are selected by examination.
Fee for eighteen months' Medical and three years' Surgical Practice, £30
Fee for attendance on the Hospital Practice and Lectures required by the College of Surgeons and the Apothecaries' Company, £75. This sum may be paid by instalments of £30 at the beginning of the First Session, £30 at the beginning of the Second Session, and £15 at the beginning of the Third Session.

For further information, or prospectuses, apply to Dr. Frere, Dean of the School; to Mr. De Morgan, Treasurer to the School, at the Hospital daily, from One to Two o'clock; to Dr. Corfe, the Resident Medical Officer; or to Mr. Shedden, Secretary to the Hospital.

Anderson's University, Glasgow.—

The MEDICAL SESSION begins on TUESDAY, 3rd NOVEMBER. Anatomy and Practical ditto by Drs. M. S. and G. BUCHANAN; Chemistry and Practical ditto by Dr. PENNY; Materia Medica by Dr. MORTON; Institutes of Medicine by Dr. E. WATSON; Surgery by Dr. HUNTER; Midwifery by Dr. PATERSON; Practice of Medicine by Dr. ANDERSON.

In Summer—Botany by Dr. BELL; Medical Jurisprudence by Dr. COWAN.

FEE for all the Classes required for Diploma, £30.

A Syllabus of the Lectures and other particulars may be obtained from

Dr. ANDREW ANDERSON, Secretary, 2, Woodside Crescent.

Grosvenor Place School of Medicine

(ADJOINING ST. GEORGE'S HOSPITAL.)

The SESSION will commence on THURSDAY, OCTOBER 1st, with an Introductory Lecture by Dr. RICHARDSON, at 3 p.m.

WINTER SESSION 1857-58.

Anatomy—Mr. Adams and Dr. Halford.
Physiology—Dr. Richardson.
Chemistry—Mr. Rodgers.
Practice of Medicine—Dr. Lankester, F.R.S.
Pathology—Dr. Cockle.
Surgery—Mr. Spencer Wells and Mr. Adams.
Histology—Dr. Woodham Webb.

Prizes are awarded in each class at the end of the Session.

The Dissections are conducted under the direct supervision of the Lecturers on Anatomy.

Fee to the entire courses of Lectures required by the Examining Boards, THIRTY-FIVE GUINEAS.

For prospectuses and further information, apply at the School, at the residence of the Honorary Secretary, Dr. RICHARDSON, 12, Hinde Street, Manchester square, or at the residence of any of the Lecturers.

St. George's Hospital Medical School.

—The WINTER SESSION will commence on Thursday, the 1st of October, with an Introductory Address by Dr. Fuller, at 2 p.m.

LECTURERS.

Practice of Physic—Dr. Page and Dr. Pitman.
Practice of Surgery—Mr. Tatum.
Descriptive and Surgical Anatomy—Mr. Pollock and Mr. Gray.
Physiology, General and Comparative Anatomy—Mr. A. Johnson.
Chymistry—Dr. H. M. Noad.

The Hospital contains 350 beds. Clinical Lectures will be delivered every week by one of the Physicians and Surgeons.

One ward in the Hospital is devoted to the diseases peculiar to women, and pupils have ample opportunities of attending practical midwifery under the superintendence of Dr. Robert Lee, the Obstetric Physician.

Perpetual pupils are eligible to be assistant house-surgeons for six months and house-surgeon for 12 months, without additional fee. Students of hospital are eligible to the office of Obstetric assistants after their second year without additional fee. The house-surgeon's and obstetric assistant reside and board in the Hospital for 12 months.

Gentlemen entering to the Hospital Medical School, may qualify themselves for the Examinations of the College of Surgeons, and the Apothecaries' Hall by the payment of Forty Guineas the 1st year, Forty Guineas the 2nd year, and Twelve Guineas the 3rd year.

EXHIBITIONS AND PRIZES.—"The William Brown Exhibition" of £40 per annum, tenable for three years, founded by the widow of William Brown, Esq., formerly a pupil of St. George's Hospital, may be held by any perpetual Pupil who has commenced his third but not completed his fourth Winter Session. Students entering to the Hospital as Perpetual Pupils during the Winter Session 1857-8 will be entitled to compete for this Exhibition.

Gentlemen entering to the Hospital Medical School in this Session will have the privilege of competing for a Prize of Twenty Guineas. The subjects of examination will be Anatomy and Physiology.

The following Prizes will be offered for the encouragement of Clinical study under certain regulations:

A Prize of Twenty Guineas for Surgeons' Pupils in their second year.
A Prize of Twenty Guineas for Surgeons' Pupils in their third year.
A Prize of Twenty Guineas for Physicians' Pupils in their first year.
A Prize of Twenty Guineas for Physicians' Pupils in their second year.

Sir Benjamin Brodie's Clinical Prize in Surgery: the Lewis Powell Clinical Prize in Medicine: the Thompson Medal, and Sir Charles Clarke's Prize for good conduct will be awarded at the end of the Session.

Further information may be obtained from Mr. Pollock, the Treasurer of the School, or from Mr. Hammerton, the Apothecary of the Hospital.

Liverpool Royal Infirmary.—The

Session 1857-8 will commence on Thursday, October 1st.

Physicians—Dr. VOSE, Dr. DICKINSON, and Dr. TURNBULL.
Surgeons—Mr. STUBBS, Mr. LONG, and Mr. E. R. BICKERSTETH.
House-Surgeon—Mr. EDWARD MORRIS.

The Hospital contains 295 Beds. The average number of Patients admitted, upwards of 2,000 annually. Students are admitted to the Medical and Surgical Practice from 10 a.m. to 1 p.m. daily.

TERMS FOR HOSPITAL ATTENDANCE:—For Six Months, £10:10; for the first year, £18:18; for the second year, £12:12; for the third year, £10:10; unlimited, £36:15.

Certificates of Attendance received by the Royal College of Physicians, Royal College of Surgeons, London University, and the Worshipful Society of Apothecaries.

Clinical Lectures will be delivered by the Physicians and Surgeons; and Clinical Clerkships and Dresserships given to the most deserving of the Students.

Apprentices admitted to reside and board in the house for five years at Sixty Guineas per Annum, exclusive of fee for Hospital Practice.

For further information apply to Mr. MORRIS, House-Surgeon, at the Infirmary.

Liverpool Royal Infirmary, Sept. 8, 1857.

Printed by THOMAS RICHARDS, at his Office, 37, Great Queen Street, Lincoln's Inn Fields, in the County of Middlesex: and published by THOMAS JOHN HONEYMAN, as aforesaid; and Sold by all Booksellers and Newsvenders.—Saturday, September 19, 1857.